

The Battles of Philippine Sea and Leyte Gulf

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for graduation
with distinction in History in the undergraduate colleges of The
Ohio State University

By

Mark Gribbell

The Ohio State University
June 2005

Project Advisor: Professor John F. Guilmartin, Department of
History

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ACKNOWLEDGEMENTS

Completing this thesis would have been impossible to do alone. There are several people I owe thanks to. First, to my parents for funding, play testing, editing, and support. Second to my friend, Gordon Cromley, for play testing, editing, and support, and who was nice enough to have the Battle of Leyte Gulf scenarios set up in his dorm room for at least one month. And lastly, to my advisor, Dr. Guilmartin, for play testing, editing, and for always believing in my success.

A NOTE TO WAR GAMERS

To recreate and play the scenarios of the Battle of Philippine Sea and Battle of Leyte Gulf as described in this paper, war gamers will need the full versions of Avalon Hill's *MIDWAY* and *GUADALCANAL* naval war games (the 1992 versions), as well as the expansion set of counters found in *THE GENERAL*, volume 28, number 5.

LEGAL NOTICE

MIDWAY, *GUADALCANAL*, AND *THE GENERAL* ARE OWNED BY AVALON HILL. THE SCENARIOS OF PHILIPPINE SEA AND LEYTE GULF THAT USED RULES AND COUNTERS FROM THE *MIDWAY*, *GUADALCANAL*, AND *THE GENERAL* WERE MADE FOR PURE ACADEMIC PURPOSES AND NO MONETARY GAIN WAS COLLECTED.

Forward

There are two cherished myths in American popular culture about World War II. Purveyed through classrooms and television, they are used as examples of the quality and character of our troops, their firm belief in a just cause and their uncanny sacrifice of the self to the group, that evoke of the greatest traditions from the Roman Republic. The first myth is that the Wehrmacht, man for man, was the finest Armed Force in the world. The second myth is that although the U.S developed a “Germany First” policy, the meager forces devoted to the Pacific were more than a match for the Japanese forces led by incompetent officers and that after Guadalcanal, and Americans never really came close to defeat despite Pearl Harbor.

In our education here at The Ohio State University, our professors have worked hard to dispel these myths. Recent evidence suggests that by 1944-1945, the U.S army achieved an operational capacity that far outmatched anything that the Germans had achieved earlier in the war. In the Pacific, the myth of poor leadership on the Japanese side was dispelled, but one last question remained; did the Japanese Navy possess any combat capability after 1942?

Mark Gribbell’s senior thesis is an attempt to answer that question. His stirring narrative sheds new light on questions; such as how much did the degradation of the IJN carrier pilots affect the campaigns of 1944? He also asks, could the Japanese have won a decisive naval engagement after Guadalcanal? The reality bore out on meticulously recreated wargaming scenarios is compelling. Before this project I had bought into the long cherished tradition that in World War II the battleship was no longer a potent offensive weapon, but the results of this thesis indicate otherwise.

This senior thesis is the result of hard work, a single-minded sense of purpose, and a grasp of the operational situation that can only come from exhaustive research. I hope that future readers will enjoy reading his research as much as I enjoyed in its participation.

Gordon A. Cromley
History Major
Class of 2005

Part One: Introduction



The USS Enterprise at sea.
Except for three Japanese cruisers,
the Enterprise was the only ship to
fight at Midway, the three carrier battles
at Guadalcanal, Philippine Sea, and
Leyte Gulf. Unlike the three Japanese
cruisers, the Enterprise played a major
role in all six battles and survived the
Battle of Leyte Gulf.

Two of the greatest naval battles of all time, the Battle of Philippine Sea and the Battle of Leyte Gulf, are the topic of this thesis. These two battles also represented the death of the Imperial Japanese Navy as an effective fighting force. By 1941 the Japanese had constructed what was arguably the world's most powerful navy, with modernized battleships, carriers manned with top pilots, and surface forcers armed with unsurpassed torpedoes and night fighting skills.

Unfortunately for the Japanese, their pilot replacement program was extremely inadequate. After taking horrific airplane losses in the carrier battles at Midway and Guadalcanal in 1942, the Japanese found themselves seriously lacking skilled pilots. They attempted a hasty pilot replacement program, and the resultant pilots faced off with the American fleet at the Battle of Philippine Sea in June 1944 and were annihilated in what American pilots labeled 'The Great Marianas Turkey Shoot'. Their carrier air arm ruined, the Japanese attempted to use surface forces to stop the American landings at the Philippines in October 1944, which resulted in the Battle of Leyte Gulf – the largest naval battle in history. The Japanese failed once again, leaving their once mighty navy little more than a historical curiosity.

Modern scholars agree that the lack of skilled Japanese pilots greatly assisted the American war effort. But what would have happened if the Japanese *did* have skilled pilots in 1944? This question seems to not have received much more than a cursory discussion in academia, and this thesis is an attempt to answer that question.

To study the effects of skilled Japanese pilots at the Battles of Philippine Sea and Leyte Gulf, the rules and game systems of the war games *MIDWAY* and *GUADALCANAL*, made by Avalon Hill in 1992, have been modified and new scenarios

for the battles were created. New rules were necessary to accurately recreate the 1944 battles and the capabilities and/or shortcomings of the American and Japanese Navies. The modified rules and new scenarios, along with all the information needed to recreate and play these scenarios, can be found in the appendices.

The need to war game these two battles to test the skilled Japanese pilots is vital, for without the war gaming experiences this paper would be little more than theory and would have a negligible amount of hard data to draw conclusions from. But the *MIDWAY* and *GUADALCANAL* game systems are not perfect. Using ten sided dice, a whole multitude of outcomes can result, and the games can often be bloodthirsty. This accurately reflects the Battle of Midway. At Midway, a single dive bomber squadron inflicted lethal damage on four Japanese carriers four times in a row. In order for this to be recreated, the bombing values have to be increased, and would therefore affect all other games and game aspects when the exceptional situation faced at Midway did not repeat itself, mostly because of better Japanese planning and decision making. I have made appropriate considerations when analyzing the results of the play tested battles.

Another shortfall is the inaccuracy of flying times. The game turns are four hours in length, and in that amount of time a bomber squadron can take off from its base, attack its target 700 miles away, and return to that base. Such a task would not take four hours, but more like twelve. Again, I have made the appropriate considerations in my analysis of the play tested battles.

One last flaw is the ability to search with perfect intelligence. If a scouting airplane flies into the same area as an enemy fleet, that enemy fleet is automatically found. In World War II search planes often flew right over opposing forces without

spotting them. One major example is during the Battle of Midway when a Japanese scout plane went right over the American fleet early in the battle without noticing it.

Even so, the *MIDWAY* and *GUADALCANAL* game systems were used for their simplicity, and for their relatively short playing times that made it feasible to test a considerable number of alternative scenarios. Finally, once suitably modified they offer credible results within an acceptable degree of error, an important aspect of this study that I confirmed by playing actual historical scenarios with several players; in each case the outcome was very close to the historical results. Playing these games has been enjoyable and revealing. More important, I believe that they have given us significant new insights into World War II at sea that extends beyond the concluding phases of the war against Japan.

Mark Gribbell

5/18/05

Part Two: The Battle of Philippine Sea



‘Murderer’s Row’ anchored at Ulithi in December 1944, consisting of the *Essex* class carriers *Wasp (II)*, *Yorktown (II)*, *Hornet (II)*, *Hancock*, *Ticonderoga*, and *Lexington (II)*. The quality and quantity of the *Essex* class carriers presented an almost unsolvable problem for the Japanese to deal with.

“Task Force 58 must cover Saipan and our forces engaged in that operation.”
Vice Admiral Raymond Spruance

The question of whether it is better to have quantity or quality has been long debated in military history. Unfortunately for Admiral Jisaburo Ozawa, the commander of the Imperial Japanese Navy's carrier forces in June of 1944, his opponents in the American Navy possessed the advantage in both areas. Facing fifteen carriers, with 94 escorting ships, and 956 aircraft, Ozawa could only muster nine carriers, 41 escorts, and 473 aircraft¹.

Since 1942 both Navies had rearmed their air groups with newer and more advanced airplanes. The American carriers now used the F6F 'Hellcat' fighter, the SB2C 'Helldiver' dive bomber, and the TBM 'Avenger'; however, the *Enterprise* still used the older SBD 'Dauntless' dive bomber, but also carried the new F4U 'Corsair' fighter. The Japanese were now using the A6M5 'Zero' fighter (an upgraded version of the A6M2 used during 1942), the D4Y 'Judy' dive bomber (although the *Junyo* and *Hiyo* still used the older D3A 'Val'), and the B6N 'Jill' torpedo bomber. While the American and Japanese planes were roughly equal on paper, the Hellcat was markedly superior to the Zero in speed, rate of climb, and engine power.²

However the most important difference between the fleets was the amount of training and experience of the pilots. In 1941 the Imperial Japanese Navy (IJN) pilots received 700 hours of training while their counterparts in the United States Navy (USN) received only 305 hours. But by 1944 the Japanese pilot training had been cut to only 275 hours due to a crash course undertaken by the Japanese Navy to rebuild their air arm and by the lack of fuel available in the Japanese Empire. Conversely the American Navy increased their training to 525 hours by 1944.³

Indeed, not only was the training increased, but also the size and scope of the American military had reached a phenomenal level. After breaking through the Gustav line in Italy and out of the Anzio beachhead on 23 May 1944, American and Allied troops captured Rome on 4 June while pursuing German troops up the Italian peninsula. Two days later America and her allies launched Operation Overlord and successfully landed at Normandy. Back in the Pacific, MacArthur's troops occupied Hollandia on New Guinea on 22 April, and proceeded to land on Biak Island on 27 May. Finally on 11 June the USN raided the Mariana Islands and American troops hit the beaches of Saipan four days later. In summary the United States preformed an unprecedented feat of military power projection in less then two months, with soldiers, ships, and airplanes successfully going on the offensive in four separate theaters, all far away from home⁴.

The Japanese originally decided to attempt to relieve Biak, but after several failed attempts and news of American raids on the Marianas, the Japanese Navy sortied to engage the American battle fleet, Task Force 58, in the Philippine Sea. Admiral Ozawa, realizing that his pilots were not up to caliber, still had two advantages: the longer range of some of his aircraft over their American adversaries, and a favorable wind direction. Ozawa decided to use both in an attempt to attack Task Force 58 and remain out of range of American counterattacks. His pilots would use Guam as a refueling station, but unknown to Ozawa, the situation on Guam was much worse then the base's commander had reported.

In command the 5th Fleet, Admiral Raymond Spruance decided to allow the Japanese to strike first (much to the protest of Vice Admiral Marc Mitscher, commander

of Task Force 58) so his fleet could continue covering the landings on Saipan and not be drawn into what might become a wild goose chase⁵.

Game 1: Historical scenario

United States player: Mark Gribbell

Japanese player: Fred Gribbell

Historical rules are in effect (Rule 1d)

Turn 8: 19 June 1944, 0400 – 0800

American carriers launched over 200 fighters for CAP (Combat Air Patrol) at dawn along with several search patrols to look for the Japanese fleet. The search planes successfully located the Japanese C Force, but the Japanese were also successful in their searches, locating both Task Groups 58.1 and 58.7. The Japanese light carrier *Chiyoda* managed to survive an attack from an American submarine and two Japanese strikes attacked the American fleet. The first strike, directed at Task Group 58.7, ran into a hail of American F6F interceptors and anti-aircraft (AA) fire, and the strike scored no hits. The second strike attacked Task Group 58.1, and while its pilots almost hit the light carrier *Bataan*, this strike was also beaten off with heavy losses from interceptors and AA fire. Together, the two strikes lost 15 squadrons while the American CAP suffered no serious casualties.

Turn 9: 19 June 1944, 0800 – 1200

While the US fleet maintained their CAP, the Japanese launched another strike, this time after Task Group 38.4. Again attacking in two waves, the Japanese lost another 12 squadrons to American interceptors and AA, while only scoring a near miss on the carrier *Essex*, which caused negligible damage. The Japanese fleet was not so lucky, as the prowling submarine *Albacore* attacked and sank the carrier *Hiyo*.

Turn 10: 19 June 1944, 1200 – 1600

American fighter patrols at Guam managed to catch two squadrons of Japanese planes attempting to take off from the base, and promptly shot both down, bringing total Japanese losses to 29 squadrons (over 300 aircraft). The submarine *Muskallunge* followed up on the *Albacore*'s success by attacking and sinking the Japanese flagship, the heavy carrier *Taiho*.

Turn 11: 19 June 1944, 1600 – 2000

Both the Americans and Japanese managed to keep fixes on each other's fleets, and while the Japanese turned west to retire from the battle, the Americans set out in pursuit.

Turns 12 and 13: 19 – 20 June 1944, 2000 – 0400

Both fleets proceeded westward during the night and prepared for air operations for the following morning.

Turn 14: 20 June 1944, 0400 – 0800

After scouts from the carrier *Enterprise* located the Japanese fleet, the Americans launched a tremendous strike, while the Japanese launched every fighter they could into their CAP. However, American escort fighters smashed right through the Japanese CAP, downing six squadrons while losing only twenty planes, and the American bombers proceeded unhindered. While Japanese AA fire shot down almost thirty aircraft, the Americans proceeded to sink the carriers *Shokaku*, *Zuikaku*, and the light carrier *Chitose*, while damaging the carrier *Junyo* and light carrier *Chiyoda*. After the American strike finished the Japanese managed to break off from the battle and the US fleet returned to support the landings on Saipan, thus ending the battle.

LOSSES: The Americans lost 50 aircraft in combat along with several scouting patrols, but suffered no damage to their ships. The Japanese lost 35 squadrons (over 350 aircraft) while losing the *Taiho* and *Hiyo* to submarines, and the *Shokaku*, *Zuikaku*, and *Chitose* to American strikes. With five carriers sunk and over 350 aircraft shot down while suffering few losses themselves, the American Navy decisively won the Battle of Philippine Sea.

Historically the Japanese lost the carriers *Taiho*, *Shokaku*, and *Hiyo*, as well as 426 aircraft, while the Americans lost a total of 130 planes, 82 of which were lost while trying to return to their carriers after a strike on the Japanese fleet at sunset on 20 June. Japanese bombers only managed to score a single minor hit on the battleship *South Dakota*⁶.

While the aircraft losses roughly match the losses historically, the number of ships sunk is much different. This was due to high die rolls and the fact that the final American strike was much larger than the air strike made on 20 June. Even so, the game turned out matching history relatively closely. Only five Japanese carriers were sunk instead of three, and while the timing of the American counter strike was off (the American strike hit at dusk, not in the morning), this was due to restrictions on the map board.

Game 2: Thesis scenario

United States player: Fred Gribbell

Japanese player: Mark Gribbell

Japanese player uses printed values on aircraft counters

Turn 8: 19 June 1944, 0400 – 0800

With both the Japanese and American scouts locating each other's fleets, the two sides quickly put every plane they could muster into the air, with the Japanese launching almost 100 fighters into their CAP along with over 200 launched to attack the American fleet in two waves. The strikes were directed to Task Group 58.2, and the first strike attacked and hit both the carrier *Bunker Hill* and the light carrier *Cabot*. In response, American AA and fighters shot down over 70 aircraft. Although the second wave lost another 70 aircraft, it was more successful as both the *Bunker Hill* and *Cabot* were seriously damaged during the strike.

Soon after the *Taiho* escaped a submarine attack undamaged, the first American strike zeroed in on the Japanese fleet. The Japanese CAP managed to hold off the American fighters, with both sides losing about 40 planes, while the US bombers suffered another twenty planes shot down by Japanese AA fire. However, the American strike hit the carriers *Taiho*, *Shokaku*, and the light carrier *Chiyoda*, while sinking the Pearl Harbor veteran *Zuikaku*.

The Japanese CAP proved less effective against the second American strike, losing over twenty planes while the US strike lost only fifteen planes total between the Japanese fighters and AA fire. American bombers sank the carrier *Taiho*, while seriously damaging the *Shokaku* and hitting the battleship *Musashi*.

Turn 9: 19 June 1944, 0800 – 1200

Both fleets prepared for further air operations later in the day, but an American submarine managed to put a torpedo into the *Shokaku*, further damaging the large carrier. The US fleet managed to launch a small strike against the Japanese and, facing no fighter

opposition, sank the *Shokaku* and seriously damaged the *Hiyo* while losing just over ten planes to AA fire. The loss of the *Shokaku* proved disastrous to the Japanese fleet, as she was carrying the bulk of the remaining Japanese fighters at the time she went down.

Turn 10: 19 June 1944, 1200 – 1600

The Japanese launched thirty fighters into their CAP (a noticeable difference from when, on Turn 8, the Japanese put 100 fighters into the CAP), and launched about 150 aircraft to strike the American fleet. After the *Junyo* dodged a submarine attack the first American strike reached the Japanese fleet. In the ensuing action, AA fire shot down almost 80 US planes while American bombers sank the light carrier *Zuiho*, seriously damaged the *Chitose* and *Chiyoda* and hit the *Ryuho* and heavy carrier *Hiyo*. In the following second strike the Japanese lost twenty fighters in their CAP and the Americans lost over thirty planes, mostly from AA fire. However, American bombers sank the light carrier *Ryuho* and heavily damaged the *Junyo*. The two Japanese strikes were far less successful, as over 100 planes were lost, but the *Bunker Hill* was hit once again.

Turn 11: 19 June 1944, 1600 – 2000

The Americans launched a small strike as the Japanese fleet rapidly retreated west. During the raid the US lost about 50 aircraft while sinking the *Hiyo* (with twenty planes onboard) and hitting the *Junyo*. A successful submarine attack subsequently sank the *Junyo*. During the night the Japanese fleet successfully broke contact with the USN, concluding the battle.

LOSSES: The Americans lost about 250 planes (largely from AA fire) and suffered serious damage to the *Cabot* and *Bunker Hill*. However, the Japanese lost over 370 aircraft as well as the carriers *Taiho*, *Shokaku*, *Zuikaku*, *Junyo*, *Hiyo*, the light carriers

Zuiho and *Ryuho*, suffered severe damage to the *Chitose* and *Chiyoda*, and minor damage to the battleship *Musashi*. Overall, after sustaining relatively little damage while sinking seven carriers in return, the United States, once again, decisively won the Battle of Philippine Sea.

The trained Japanese pilots achieved little more than their poorly trained counterparts. In both games the Japanese lost roughly the same number of planes, and in the thesis scenario, they only damaged the *Cabot* and *Bunker Hill*. In return, the American player lost nearly five times as many aircraft (because of better AA rolls on the Japanese part, not to the better Japanese fighter squadrons), but sank seven carriers due to increased aggressiveness on the player's part. While this scenario shows that even trained Japanese pilots would be unable to change the outcome of the battle, it also shows what may have happened if Spruance allowed Mitscher to be more aggressive, since the American player fought without any restrictions.

Game 3: Elite pilots scenario

United States player: Fred Gribbell

Japanese player: Mark Gribbell

Japanese player uses setup detailed in Rule 1f. Rule 1d is nullified.

Turn 8: 19 June 0400 – 0800

The Japanese and American fleets launched extensive CAPs and searches, but both fleets also moved in opposite directions, yielding no contacts or combats.

Turn 9: 19 June 0800 – 1200

Both sides prepared aircraft for further operations and the Americans launched a small raid on Guam, which destroyed Japanese six planes on the ground.

Turn 10: 19 June 1200 – 1600

The Japanese launched two large strikes against the American fleet while the USN launched a massive CAP and a fighter sweep against the Japanese fleet. The first Japanese strike managed to effectively hold off the American CAP, shooting down six of the US planes. The strike proceeded to seriously damage the carrier *Lexington (II)* while hitting the *Essex*, but lost 70 planes to the American CAP and AA.

The second Japanese strike proved much less effective, and as the Japanese escorts and American CAP battled indecisively, Japanese bombers scored another hit on the *Essex*. In whole the strike lost 60 planes, while damage on the American carriers wrecked ten American planes.

Meanwhile, the US fighter sweep over the Japanese fleet shot down 25 planes while the Americans lost less than twenty aircraft.

Turn 11: 19 June 1944, 1600 – 2000

Shrewdly holding back their bombers while absorbing the Japanese strike, the Americans launched a devastating counterattack against the Imperial Navy. The Japanese lost thirty planes to American fighters as well as the carriers *Shokaku*, *Zuikaku*, and *Taiho* to the American bombers. Over 50 planes were sunk along with the carriers while only 40 American planes did not return to their carriers.

Turns 12 and 13: 19 – 20 June 1944, 2000 – 0400

The Japanese fleet rapidly sailed west with the American fleet in pursuit, and both fleets prepared their aircraft for the next morning.

Turn 14: 20 June 1944, 0400 – 0800

The Japanese fleet continued to proceed west as the Americans continued pursuing and launched two strikes. The first strike shot down over thirty Japanese planes while the Imperial Navy's CAP and AA fire shot down 70 American aircraft. US bombers proceeded to sink the carrier *Junyo*, and the light carriers *Zuiho*, and *Ryuho*, while severely damaging the carriers *Hiyo*, *Chiyoda*, and *Chitose*. The second wave suffered over thirty planes lost to the Japanese, but shot down another 25 planes of the Japanese CAP, sinking the *Hiyo*, and further damaging the *Chitose* and *Chiyoda*.

LOSSES: The Japanese lost over 290 aircraft while the Americans lost nearly 200. American bombers outclassed their Japanese counterparts, sinking the *Shokaku*, *Zuikaku*, *Taiho*, *Junyo*, *Hiyo*, *Zuiho*, and *Ryuho*, and damaging the *Chiyoda* and *Chitose*, while the Japanese only damaged two American carriers (which could be easily repaired later) in return. Although aircraft losses were much more even in this game, the Japanese loss of seven carriers with nothing to show for it allowed the Americans to claim yet another decisive victory for the Battle of Philippine Sea.

Although aircraft losses were much more even with the elite Japanese pilots, the Japanese were unable to cause any additional damaged to the American fleet, and again lost seven aircraft carriers.

But why are the Americans able to continually win such decisive victories? As experience in the gaming showed, the dominant weapon in the Battle of the Philippine Sea is the F6F Hellcat. In June 1944 American fleet carriers generally carried about thirty to 40 Hellcats each while the light carriers each added about another twenty. In total, Task Force 58 carried 433 Hellcats, plus another 36 in night group detachments

(along with four Corsairs)⁷, nearly equaling the total number of planes, fighters and bombers, the Japanese carriers could put into the air. Given their additional qualitative superiority over the A6M Zero, the Hellcat dominated every air battle as they fought off enemy attacks and shielded the American bombers from enemy fighters, allowing the bombers to hit their targets without the threat of enemy aircraft.

Could the Americans have won without the F6F Hellcat? Instead of the F6F, the Americans would have the F4F Wildcat. Despite being less maneuverable and speedy than the F6F and A6M, the F4F proved itself to be quite rugged and powerful. Unfortunately, the Americans developed several tactics in 1942 to deal with the Japanese Zeros, namely, the Thatch Weave.⁸ In 1944 the Wildcats would still be able to hold off the Japanese fighters with great proficiency, but Japanese bombers would probably be able to get through to the main American fleet, and then would become the problem of the US AA gunners.

But the American anti-aircraft capabilities presented yet another major problem for the Japanese. In 1942 the American anti-aircraft proved lethal to Japanese pilots. At the Battle of Santa Cruz dozens of Japanese bombers, flown by pilots far better than those at Philippine Sea, were shot down attempting to attack the *Enterprise*, which was only covered by a battleship, a heavy cruiser, a light anti-aircraft cruiser, and eight destroyers. At Philippine Sea each carrier group had three or four carriers, three to five cruisers, and twelve to fourteen destroyers⁹, each with considerably more anti-aircraft guns than their counterparts from 1942. Also, American fire control had become greatly centralized through the introduction of the CIC (Combat Information Center), allowing the USN to direct their defensive fire clearly and with devastating effect.

American AA guns also gained a powerful new enhancement after Guadalcanal: the proximity fuse. Proximity fuses would detonate the AA shell when the projectile came within a certain distance of an airplane, turning near misses into hits. Although proximity fuses were in relatively small supply throughout the war, they proved devastating against attacking Japanese aircraft.

The US Navy's carrier doctrine was also another strike against the Japanese. In a series of raids by their carrier groups in late 1943 and early 1944, the American fast carrier task force became a well-oiled and operated machine. US carriers could land, rearm, and take off airplanes faster and more efficiently than any other navy in the world. Therefore, the Japanese had no hope of catching the American fleet off guard, as hundreds of fighters could be maintained in the US CAP at all times.

What could the Japanese have done to counter the American quantitative and qualitative edges? To start, the Imperial Navy could have simply built more carriers and aircraft. Indeed, the Japanese were planning to build another six *Taiho* class carriers (beyond the *Taiho* herself) as well as six *Amagi* class carriers, but all these ships would not be completed for at least two more years, and the Japanese needed a much quicker solution.

One possibility is that Japan could have built aircraft carriers instead of the *Yamato* class battleships, and could yield roughly two or three *Shokaku* class carriers, and their air groups, for each *Yamato* (six to nine carriers)¹⁰. However, given the fact that the *Yamatos* were built in the first place, and the Japanese high command's inability and unwillingness to see reality, it is unlikely that the Japanese would change their minds, no

matter who or what suggested otherwise. Also a large Japanese carrier building program might prompt the Americans to start their own carrier program earlier.

But simply building more carriers would not solve all of Japan's problems, as American carriers were of far better quality. An *Essex* class carrier could carry twenty to thirty planes more than the average Japanese carrier, which meant the Japanese would have to build even more carriers than the Americans in order to catch up to the USNs qualitative edge.

Instead of building more aircraft carriers, the Japanese could have gone another route and tried building large quantities of submarines like the Kriegsmarine. The Japanese submarines proved very effective in 1942, sinking the carriers *Yorktown* and *Wasp*, and the light cruiser *Juneau*. However, using tactics developed in the Atlantic, the Americans began hunting down and eliminating the Japanese submarine threat against their operations by this time of the war. Building mass quantities of midget submarines would be more economically efficient for the Japanese, but would not be very useful. Midget submarines would not be able to operate well on the high seas and lack the speed to be able to intercept American carrier task forces.

Overcoming the American qualitative edge in aircraft presented another problem for the Japanese. The United States continually designed and redesigned their airplanes throughout World War II and the Japanese proved unable or unwilling to do the same with their designs. This is not to say that the Japanese did not produce newer and better aircraft, but that these new planes were not designed and built as quickly as their American counterparts. For example, in response to the stunning abilities of the A6M Zero, the F6F Hellcat was designed, tested, and built in about a year (becoming available

in early 1943), whereas it was not until early 1944 or later that new Japanese planes, such as the Ki-84 'Frank' and Ki-100, became available¹¹. Not only did it take longer for these designs to be produced, but these higher performance machines also required substantial high quality materials, materials that the Japanese seriously lacked even in 1942.

However, a Japanese effort to build more carriers and planes would have serious problems. Any attempt to change the Japanese construction plans would have to be made in 1937, when the *Yamato* was laid down, and it is doubtful that any time traveler would be able to convince the Japanese high command that such a drastic change would be necessary. Not only would the building programs have to start before the war, but Japanese attempts to out produce the Americans would be an impossible task, as Japan's armaments spending was only about a seventh that of the United States in 1944¹². Also, the Japanese Naval commanders only became truly aware of how serious a problem they had on their hands after Philippine Sea, and by then it was too late to start any kind of building program.

Instead the Japanese would have to start using different tactics against their opponents. One tactic would be to fly attack planes individually or in small groups which may not be picked up by American radar and possibly reach the carriers. A single dive bomber managed to sink the light carrier *Princeton* during the Battle of Leyte Gulf with a well placed hit. Unfortunately such a tactic would require either naturally capable or moderately well trained pilots, as they would need to navigate to their targets by themselves.

What the Japanese needed was a quick, low tech, solution that could harness what resources they possessed, namely a lot of older planes and many of men ready to die for the Emperor. Putting the two resources together formed the Kamikaze, which was first successfully used during the Battle of Leyte Gulf. Kamikazes reached their intensity in 1945 over Okinawa, and before the war ended they hit the carriers *Essex*, *Intrepid*, *Hancock*, *Cabot*, *Ticonderoga*, *Langley (II)*, *Saratoga*, *Bunker Hill*, *Enterprise*, and *Hancock*, as well as damaging hundreds and sinking dozens of other vessels¹³. Although the USN was forming new counter measures against the Kamikazes, American sailors feared even worse destruction during the invasion of Japan, and this played no small role in using the Atom bomb¹⁴. However, Kamikazes were not a perfect solution. By the end of hostilities the Japanese were drafting pilots at gunpoint, and British carriers, with their armored flight decks, proved impervious to Kamikaze attack.

In conclusion, the Japanese could not have done anything to stop the American fleet in the Philippine Sea in 1944. Admiral Ozawa handled his ships and planes well, but in the end it was the massive American technological and quantitative edge that defeated him. As a result of the Battle of Philippine Sea, the IJN would never be able to rebuild its air strength for they lacked the resources and the time. Only four months later American forces landed at Leyte in the Philippines.

¹ Bennett, *Naval Battles of World War II*, 214 – 215.

² Gunston, *The Illustrated Directory of Fighting Aircraft of World War II*, 120 & 284.

³ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 256.

⁴ Morison, *History of United States Naval Operations in World War II*, volume VIII, *New Guinea and the Marianas*, 161 – 162.

⁵ Y'Blood, *Red Sun Setting*.

⁶ Y'Blood, *Red Sun Setting*, 220 – 221.

⁷ Y'Blood, *Red Sun Setting*, 223 – 232.

⁸ Frank, *Guadalcanal*.

⁹ Bennett, *Naval Battles of World War II*.

¹⁰ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 105.

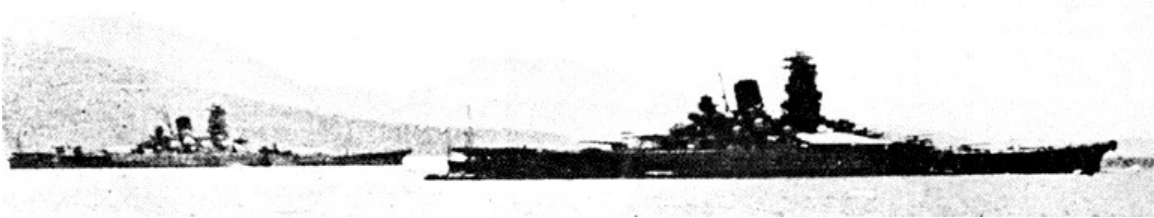
¹¹ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*.

¹² Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 356.

¹³ Degan, *Flattop Fighting in World War II*, Chapter 11.

¹⁴ Frank, *Downfall*.

Part Three: The Battle of Leyte Gulf



The *Yamato* and *Musashi* at Truk in 1943. These two battleships formed the core of the Japanese forces during the Battle of Leyte Gulf.

“What man can say that there
is no chance for our fleet to turn
the tide of war in a decisive battle?”
Vice Admiral Takeo Kurita

Given the complete failure of their carrier arm at Philippine Sea, the Japanese Navy devised a daring and complicated plan for the defense of the Philippines that almost worked. This plan, called Sho-1, used the remaining Japanese carriers as bait so that two separate battleship forces could sail through the Philippine archipelago and crush the American landing forces at Leyte Gulf¹.

The American landings on Leyte on 20 October, 1944, were covered by an armada mightier than even the one that supported the assault on the Marianas in June. This force was split into two fleets, the Third and Seventh. Seventh Fleet, commanded by Vice Admiral Kinkaid, directly transported and supported General MacArthur's troops on Leyte, and contained six battleships, four heavy cruisers (including one Australian), four light cruisers, eighteen escort carriers, and 48 destroyers and destroyer escorts. Seventh Fleet consisted of two main task forces, the bombardment force, commanded by Vice Admiral Jesse Oldendorf, and the escort carrier group, commanded by Rear Admiral Thomas Sprague.

Third Fleet, commanded by Admiral 'Bull' Halsey, was the renamed Fifth Fleet, which changed designations when Halsey switched commands with Admiral Spruance after the successful occupation of the Marianas. Third Fleet's carrier force, Task Force 38 (renamed from Task Force 58), contained eight fleet and another eight light carriers, six battleships, five heavy cruisers, nine light cruisers, 57 destroyers, and carried over 1000 aircraft².

The bait force for Halsey's carriers was puny by comparison. Commanded by Admiral Ozawa, this force was centered around the last Pearl Harbor veteran, *Zuikaku*,

along with three light carriers, two battleship/carrier conversions, eleven other escorts, and only carried a mere 118 aircraft.

However, all Japanese hopes were pinned on the main battle force, Force A, which was to sail through the San Bernardino Strait and attack the American landing forces from the north. Despite its lack of air cover, Force A contained a mighty array of surface vessels. Centered around the leviathans *Yamato* and *Musashi*, this force also sailed with the battleship *Nagato*, the battlecruisers *Kongo* and *Haruna*, eight of Japan's most powerful heavy cruisers, two other light cruisers, and fifteen destroyers. Vice Admiral Takeo Kurita commanded Force A.

Supporting Force A was two smaller forces that were to sail through the Surigao Strait and attack the landings from the south. One task force, Force C, contained two battleships, a cruiser/tender conversion, and four destroyers, while the second task force, 2nd Striking Force, contained two heavy cruisers, a light cruiser, and four more destroyers. Vice Admirals Shoji Nishimura and Kiyohide Shima commanded these forces respectively³. However, Nishimura and Shima were personally very incompatible, and with Shima operating under very poor orders and intelligence, these two forces would have an extremely difficult time completing their mission⁴.

Game 1: Historical scenario

United States player: Gordon Cromley

Japanese player: Mark Gribbell

Turn 1: 24 October 1944, 0000 – 0400

American and Japanese forces prepared for air operations while the Japanese surface forces proceeded eastward.

Turn 2: 24 October 1944, 0400 – 0800

Search planes on both sides located opposing task forces, and the Japanese launched a strike against Task Group 38.3. The strike managed to hit the carrier *Essex* and the light carrier *Princeton*, but lost over 80 planes while shooting down roughly a squadron of American CAP.

Turn 3: 24 October 1944, 0800 – 1200

American carriers and Japanese land based air units both prepared strikes against each other's forces.

Turn 4: 24 October 1944, 1200 – 1600

A Japanese strike against Task Group 38.4 hit the carrier *Franklin* and shot down twenty American fighters, but lost over 100 planes in the action. Meanwhile, a strike against Kurita's fleet hit the battleship *Yamato* and seriously damaged the *Musashi*. In return the Japanese only shot down about 20 planes.

Turn 5: 24 October 1944, 1600 – 2000

Another Japanese strike on Task Group 38.4 seriously damaged the carrier *Franklin*, but 90 planes did not return to base. A second strike against Kurita's force sank the *Musashi* while losing less than ten planes.

Turn 6: 24 October 1944, 2000 – 0000

While air actions died down due to nightfall, Admiral Nishimura's force was surprised and engaged by the American Seventh Fleet's bombardment forces in the Surigao Strait. All Japanese ships were destroyed in the engagement while Nishimura only sank three American destroyers in return. Also the light cruiser *Phoenix* was damaged by friendly torpedoes.

Turn 7: 25 October 1944, 0000 – 0400

Both sides again prepared for further air operations in the morning while Task Force 38 sailed north to locate and engage the Japanese carrier force. Kurita's battleship force also passed through the San Bernardino strait and turned south.

Turn 8: 25 October 1944, 0400 – 0800

Another Japanese strike on Task Group 38.4 resulted in no further damage to the American vessels and about 40 Japanese planes shot down. Kamikazes also struck against the transport force at Leyte, but only succeeded in hitting one transport. But after search planes located Kurita's task force the American escort carriers launched a strike, which hit the cruisers *Chikuma*, *Myoko*, and *Haguro* while losing roughly 20 planes.

In the meantime Task Force 38 attacked Ozawa's carrier force, losing about 20 planes to Japanese fighters and AA, but shooting down a dozen of the Japanese fighters. American bombers proceeded to sink the carrier *Zuikaku*, and the light carriers *Chitose* and *Zuiho*, while hitting the *Chiyoda*.

Turn 9: 25 October 1944, 0800 – 1200

After withstanding the damage from the American escort carriers' aircraft, Admiral Kurita turned around and sailed back through the San Bernardino Strait. A second American strike against Ozawa lost a dozen planes but seriously damaged the light carrier *Chiyoda* and the battleship conversion *Hyuga* while slightly damaging the *Ise*. Task Force 38 then turned back south to return to defending the landings at Leyte while all surviving Japanese forces sailed out of the area and broke contact.

LOSSES: The Americans suffered the loss of about 120 aircraft as well as three destroyers sunk and only one carrier significantly damaged. The Japanese lost over 300

planes (mostly land based air) with three carriers, three battleships, a cruiser, and four destroyers sunk. A light carrier and a battleship hybrid were heavily damaged, and another battleship hybrid, a battleship, and three cruisers were also slightly damaged. Although the airplane losses were relatively inconsequential for both sides, the Japanese Navy was soundly defeated and inflicted little damage in return.

In reality, the Battle of Leyte Gulf was actually a combination of four separate battles over two days. First came the Battle of Sibuyan Sea on 24 October, in which aircraft from Task Groups 38.2 and 38.4 attacked Kurita's A Force, sinking the *Musashi*. Kurita turned around and headed back west late in the day, tricking Halsey into thinking he was vanquished, and so the Americans turned their carriers north to attack Ozawa's carrier fleet that was finally located late in the day.

That night came the Battle of Surigao Strait, in which Oldendorf's bombardment forces crushed Nishimura's C Force. Shima's 2nd Striking Force came into the Strait in the wake of the battle, and finding the devastation of Nishimura's forces, turned around and headed for port.

In the morning of the 25th, Kurita passed through the San Bernardino Strait after turning around and heading east again late the previous day. Heading south along the island of Samar, Kurita ran into the American escort carriers, which were totally unprepared to deal with the Japanese battleships. In a defense that can only be called courageous, the escort carriers put up such a vicious fight that Kurita was scared off. In the mean time, Task Force 38 attacked Ozawa's carriers to the north, sinking all four of them. Responding to desperate calls for help from the escort carriers, Halsey then turned

south in hopes of catching Kurita, but was too late. Force A had already slipped back through the San Bernardino Strait and was heading home. The first Kamikaze attacks struck the escort carriers soon after Kurita fled. The escort carrier *St. Lo* was hit and sunk, and the Kamikaze attacks damaged several other escort carriers as well⁵.

In the real battle, the Americans lost the light carrier *Princeton*, two escort carriers, a destroyer and two destroyer escorts, more than was lost in the historical scenario. The differences in losses resulted from two different reasons. First, due to limitations in the game system, the Battle of Samar was not fought, and secondly, Japanese attacks against the *Princeton* and the Kamikaze strikes suffered from poor die rolls.

Historically, the Japanese lost many more ships including one heavy and three light carriers, three battleships, four heavy and four light cruisers, and eleven destroyers. American submarines also sank two more heavy cruisers before the start time of the game. However, the differences in losses are almost exactly made up from the Battle of Samar⁶. Although the American player's escort carriers did attack Kurita's force after the Japanese passed through the San Bernardino Strait, the planes did not perform as well as they did historically. In summary, the historical scenario roughly matched the movements and losses of the real battle.

Game 2: Maximum variant scenario #1 (Rule 2d10)

United States player: Mark Gribbell

Japanese player: Gordon Cromley

Turn 1: 24 October 1944, 0000 – 0400

As both sides prepared their air units for operations, Task Force 38 moved south to remain out of range of Formosa while Kurita's Force A moved north to join with Ozawa's carriers.

Turn 2: 24 October 1944, 0400 – 0800

Both Japanese and American scouts located opposing fleets, but neither side made any strikes.

Turn 3: 24 October 1944, 0800 – 1200

While some scouts managed to keep contact with opposing fleets, there were no attacks.

Turn 4: 24 October 1944, 1200 – 1600

American scouts managed to locate Kurita's force and a strike followed. While the Japanese only shot down a dozen planes, American bombers sank the battleship *Musashi*, the cruiser *Suzaya*, and severely damaged the cruiser *Kumano*.

A second American strike attacked Nishimura's C Force. The strike and a Japanese CAP both lost less than ten planes, and American bombers sank the cruiser *Ashigara* and seriously damaged the cruiser *Nachi*.

Turn 5: 24 October 1944, 1600 – 2000

Kurita's task force moved out of range of further American attacks, but no further strikes were made.

Turn 6: 24 October 1944, 2000 – 0000

Very little occurred as American forces regrouped and Kurita and Ozawa's forces continued to sail towards the northern Philippines to link up.

Turn 7: 25 October 1944, 0000 – 0400

Scouts launched from the light carrier *Independence* located Nishimura and Shima's fleets, confirming they were still in the Sibuyan Sea.

Turn 8: 25 October 1944, 0400 – 0800

After linking up, Kurita and Ozawa's fleet was found by American scouts. Task Force 38 proceeded to launch a massive strike against the fleet, and expecting the American attack, the Japanese launched as many fighters into the air (from both the carriers and from land bases) as CAP.

About 160 Japanese fighters confronted over 400 American aircraft in what would surely be one of the largest naval/air battles in history. Although outnumbered, American escort fighters held off the Japanese CAP, shooting down nearly 60 fighters while losing less than ten themselves. American bombers lost about 40 planes to AA fire, but seriously damaged the battleship *Yamato* and light carrier *Chitose*, and sank the carriers *Shinano*, *Zuikaku*, and *Chiyoda*. Over 100 Japanese bombers onboard the three sunken carriers also went down with their ships.

A second, smaller, strike also attacked Nishimura and Shima's forces, seriously damaging the cruiser *Mogami*.

Turn 9: 25 October 1944, 0800 – 1200

Shattered by the American attack, Kurita and Ozawa's forces began a retreat to the north to return to Japan. Meanwhile, confident that Japanese airpower had been seriously mauled, the Third Fleet formed Task Force 34 to deal with Nishimura and Shima's fleets.

Turn 10: 25 October 1944, 1200 – 1600

Task Force 34 engaged the Japanese C and 2nd Striking Forces. In the short, but bitter conflict, American forces sank all of Nishimura and Shima's forces (the battleships *Fuso* and *Yamashiro*, the heavy cruisers *Nachi* and *Ashigara*, the light cruiser *Abakuma*, and eight destroyers) while losing the heavy cruiser *Salt Lake City* and receiving serious damage to the *Salt Lake City*'s sister, the *Pensacola*, and light damage to the light cruiser *Miami*. With all remaining Japanese forces rapidly fleeing the area, the Battle of Leyte Gulf ended.

LOSSES: Air losses were relatively light on both sides, with the Americans and Japanese both suffering 70 planes lost, but the Imperial Navy lost another 100 aircraft on their sunken aircraft carriers. The US Navy lost only a heavy cruiser, and suffered damage on two other cruisers, while the Japanese lost three carriers, three battleships, four heavy and one light cruiser, and eight destroyers. Further damage on the Japanese fleet was also inflicted on a heavy cruiser, a battleship, and a light carrier. With a nineteen to one ship sink ratio, the Americans easily won the Battle of Leyte Gulf.

Attempting a new strategy, the Japanese player endeavored to link up his two most powerful forces in an effort to lure Task Force 38 north so that a combined land based air, carrier, and battleship forces could attack the main American battle fleet at one time. However, the American fleet managed to launch a massive strike at maximum range against this combined Japanese force while staying out of range of Formosa and eliminate the main striking power of the Japanese Navy. Also, an attempt to lure the American forces northward would be doomed to failure, for the American fleet's objective was to cover the landings at Leyte Gulf, not chase around the Japanese fleet

(although this strategy may have worked against Halsey). Another point is that the two combined forces did not enhance the Japanese AA protection, for only a limited number of ships can be arranged to protect a specific vessel. Finally, combining the two powerful Japanese fleets actually helped the Americans, as it gave the US Navy only one single powerful task force to worry about instead of two, and this force remained far away from the landing zone, posing no threat to the American invasion.

Game 3: Maximum variant scenario #2 (Rule 2d10)

United States player: Gordon Cromley

Japanese player: Mark Gribbell

Turns 1 – 7: 0000 24 October – 0400 25 October 1944

The first day of the Battle of Leyte Gulf involved much maneuvering with both fleets, as Task Force 38 stayed out of range of Formosa and Kurita, Nishimura, and Shima's fleets lined up west of the Philippines. A Japanese strike on Task Groups 38.3 and 38.4 in the midday lost nearly 70 planes and only managed to hit the light carrier *Princeton*, which was repaired overnight.

Turn 8: 25 October 1944, 0400 – 0800

After scouts located fleets on both sides, two large strikes from land bases attacked Task Groups 38.3 and 38.4. The Americans lost about fifteen fighters from their CAP, but shot down almost 120 Japanese planes. Japanese torpedoes and bombs still proved deadly, as the light carrier *Belleau Wood* was hit, the fleet carrier *Lexington (II)* seriously damaged, and the light carrier *Langley (II)* sunk with 40 planes onboard.

Turn 9: 25 October 1944, 0800 – 1200

American carrier bombers responded well, striking against the combined A, C, and 2nd Striking Forces sailing through the Sibuyan Sea. In two large strikes, the Americans lost about 40 planes, but sank the heavy cruisers *Mogami* and *Haguro*, the battlecruisers *Kongo*, and *Haruna*, and the battleship *Yamato*. Further, severe damage was inflicted to the light cruiser *Abakuma* and battleship *Musashi*.

Turn 10: 25 October 1944, 1200 – 1600

Another Japanese strike from land bases zeroed in on Task Groups 38.2 and 77.2. American fighters and slow battleships put up a terrific air defense, shooting down nearly 170 planes, while Japanese bombers managed to only slightly damage the carrier *Intrepid*.

Turn 11: 25 October 1944, 1600 – 2000

After passing through the San Bernardino Strait, the A, C, and 2nd Striking Forces were again attacked by American carrier planes in a devastating strike. The Americans lost only 20 aircraft while sinking the battleships *Musashi*, *Nagato*, *Fuso*, and *Yamashiro*, and damaging the heavy cruisers *Nachi* and *Ashigara*.

After surviving the air attacks, the Japanese then ran into the screen forces of Task Groups 38.3 and 38.4. Realizing they were outnumbered, the Japanese quickly turned to flee, but lost the damaged cruisers *Ashigara*, *Nachi*, and *Abakuma*, as well as the light cruisers *Yahagi* and *Noshiro* in the retreat.

Turn 12: 25 October 1944, 2000 – 0000

The carrier *Intrepid* completed repairs and American forces continued to coalesce around Leyte.

Turn 13: 26 October 1944, 0000 – 0400

Going for the Banzai attack, the remaining ships of the A, C, and 2nd Striking Forces sailed in a long arc to the east and then to the south west in an attempt to circle around the American fleet and attack the transports.

Turn 14: 26 October 1944, 0400 – 0800

The Japanese launched another strike against Task Groups 38.3 and 38.4, shooting down less than ten American fighters and losing 70 aircraft in return. However, the strike managed to hit the light carrier *Princeton* and sink the fleet carrier *Lexington (II)*, which went down with 25 planes onboard.

In return American bombers attacked the A, C, and 2nd Striking Forces, losing a dozen planes, but sinking the heavy cruisers *Chikuma*, *Myoko*, and *Suzaya*. The heavy cruisers *Tone* and *Kumano* were also seriously damaged.

Another American strike attacked Ozawa's carrier force, sinking the light carrier *Chitose*, hitting the carrier *Zuikaku*, and severely damaging the carrier *Shinano*, while losing a dozen planes to AA fire.

The A, C, and 2nd Striking Forces managed to reach the landing zones, but were engaged by the screen of Task Group 38.1. In the vicious surface battle that followed, the Japanese sank the heavy cruisers *Chester* and *Pensacola* and six destroyers with torpedoes, along with eight more destroyers and the light cruiser *San Diego* by gunfire. In return, the Japanese lost thirteen destroyers and the heavy cruisers *Tone* and *Kumano*. The cruiser *Chokai* managed to get within range to fire at some LSTs, but did not score any significant hits.

Turn 15: 26 October 1944, 0800 – 1200

Attempting to leave the area after the American transports successfully survived their attack, the remains of the A, C, and 2nd Striking Forces sailed into Surigao Strait, and were attacked by bombers from the American escort carriers. After losing two destroyers, the Japanese were intercepted by Task Group 77.3, and in a short surface action, lost the heavy cruiser *Chokai* and six destroyers, completely eliminating the entire A, C, and 2nd Striking Forces. Only the heavy cruiser *Shropshire* was slightly damaged by Japanese gunfire in return.

Turn 16: 26 October 1944, 1200 – 1600

One final strike against Task Groups 38.3 and 38.4 hit the light carrier *Princeton* and shot down a dozen American fighters, but lost about 60 planes in return. An American strike against the Japanese carriers shot down over 30 Japanese fighters while losing only 20 planes in return, but sank the carrier *Shinano* and seriously damaged the carriers *Zuikaku* and *Chiyoda*. A small second strike against the carriers proceeded to shoot down a dozen Japanese fighters, but lost a dozen planes in return. However, the Americans managed to put a few more torpedoes into the *Zuikaku*, sinking her. The remaining Japanese ships managed to break contact during the night, ending the battle.

LOSSES: The Japanese lost over 460 aircraft while the Americans lost only 130 planes with another 65 planes sunk with their carriers. American ships losses numbered a fleet and a light carrier, two heavy and a light cruiser, and fourteen destroyers. The Japanese suffered far worse, losing two heavy and a light carrier, seven battleships, ten heavy and three light cruisers, and 23 destroyers.

Although the Japanese managed to sink a fleet carrier and attack the transports, they also sacrificed their fleet to do so. American losses could be easily replaced, but the Japanese Navy could never hope to replace theirs. This scenario does shed light on how powerful aircraft carriers can be, for in two turns the US carriers sank seven battleships, a force that took Japan nearly thirty years to build, while holding off enemy air strikes with relative success and defending the landings. Although the landings were disrupted by the shattered remains of the Japanese A, C, and 2nd Striking forces, they would easily be able to begin landing their supplies within a day (and probably in considerable less time), and Army troops would be in no real danger of running out of supplies.

The skilled Japanese pilots proved more effective than in past scenarios, but mainly because of their tremendous numbers of torpedo bombers. Overall, the skilled Japanese pilots did not make a big difference in the results of Leyte Gulf, and, as mentioned earlier, the American casualties could be easily replaced.

A major helping factor for the American fleet that is not readily apparent in all three scenarios is the escort carriers. One must keep in mind that while Task Force 38 was busy striking against the Japanese fleet, the escort carriers of Task Group 77.4 was keeping an average of over 100 fighters as CAP over the landings at all times, effectively eliminating the possibility of a successful Japanese air attack. True unsung heroes, the escort carriers give incredible flexibility to the main American battle fleet because the big carriers don't have to directly protect the landings, allowing them the ability to smash the Japanese Navy. Although tasked with less glamorous, but no less important duties, the escort carriers are a key component of the American success in the Pacific.

Another result of play testing is the realization that the battleships are the primary protagonists of the Battle of Leyte Gulf, not the aircraft carriers. This is because the Japanese carrier force is so puny in comparison to the Americans (even when the full air groups and the *Shinano* are added) that they can only be used as a distraction, and the battleships must be used as the main weapon.

But sinking the Japanese battleships was no easy feat. Often in the games, as well as historically, only the battleship *Musashi* was sunk before the Japanese sail through the San Bernardino strait. Once the Japanese are through the strait, it becomes more difficult for the American carriers to deal with the battleships, for at that point the amount of time it would take to ready a strike is also about the same amount of time it would take for the Japanese to reach the American transports. As a result, the most efficient way of dealing with Japanese fleet is for the Americans to engage them in surface combat with their own battleships. In this situation the battleships, even the older, slower ones, become extremely useful.

However, the constant presence of the American carriers disrupts the ability to test just how damaging the Japanese surface forces could have been at the Battle of Leyte Gulf. Given the fact that any knowledgeable American player would never allow the San Bernardino strait to go unprotected as in the real war, it is impossible and inefficient to effectively test out the different surface action possibilities when playing the full game. Therefore, four surface battles were played to explore the potential actions and results of various combinations of Japanese and American surface groups while temporarily taking Task Force 38 out of the picture.

To start, the first surface possibility is what if Nishimura and Shima made it through the Surigao Strait unhindered and reached the landing zones in the morning of 25 October? It is likely that Rear Admiral Jesse Oldendorf's bombardment force (Task Group 77.2 and 77.3, which historically wrecked Nishimura's fleet in the Battle of Surigao Strait) would be near the transports and could form up to engage Nishimura and Shima's fleets.

Surface Action #1: Nishimura & Shima vs. Oldendorf and transports
United States player: Mark Gribbell
Japanese player: Dr. Joe Guilmartin

Putting up a spirited fight despite being heavily outgunned, the Japanese managed to sink eleven destroyers and slightly damage four battleships (the *West Virginia*, *Maryland*, *California*, and *Tennessee*). All Japanese ships in both Nishimura and Shima's Task Forces were sunk in action.

Despite not being surprised (as in the real war at Surigao Strait) as well as linking up with Shima's fleet, Nishimura's force was still soundly defeated by Oldendorf's fleet. It is doubtful that under any circumstances, Nishimura could have changed the outcome of the battle, given the fact that his battleships were outnumbered three to one and his escorts even more so.

A more balanced and exciting battle, and one that almost happened, is that between Kurita's A Force and Vice Admiral Lee's Task Force 34. The surface component of Task Force 38, Task Force 34 was to be detached as an independent fleet in case the need or opportunity of directly attacking Japanese surface forces arose. Admiral Halsey could and should have detached Task Force 34 to cover the San

Bernardino strait before sailing north to attack the Japanese carriers on 25 October. Instead, Lee's force went with the carriers and missed out on an opportunity to confront Kurita in not just what was the only time the two most powerful battleships ever built, the *Yamato* and *Iowa*, could have faced off, but also what might have been the most dramatic and decisive large-scale surface battle since Trafalgar.

Surface Action #2: Kurita vs. Lee
United States player: Gordon Cromley
Japanese player: Mark Gribbell

Both forces arrayed their fleets in three separate battle lines, the first with destroyers, the second with cruisers, and the third with capital ships. In the ensuing melee, three distinct phases resulted: the torpedo attacks, the battle line slug out, and the Japanese retreat.

To start the battle, the Japanese quickly fired their torpedoes in the destroyer line, then after some skillful maneuvering fired the torpedoes from their cruiser line. The two torpedo barrages coupled with gunfire sank eighteen American destroyers, the light cruisers *Vincennes (II)*, and *Miami*, as well as the heavy cruiser *New Orleans*. The light cruiser *Biloxi* was also damaged. With the Japanese remaining out of range of the American torpedoes, Lee's ships responded solely with gunfire, successfully sinking the heavy cruisers *Haguro*, *Myoko*, and *Chikuma*, the light cruiser *Yahagi*, and two destroyers. After the torpedo attacks, the two main battle lines managed to get within range of each other, and the *Yamato* open fired on the *Iowa*, but missed with her first barrage.

The American battleships quickly responded, and while the two main lines sailed parallel and exchanged fire, the US battlewagons concentrated on the *Yamato* and gained

a clear upper hand. By the time the *Yamato* finally sank under a deluge of 16” shells, the Japanese had also lost the heavy cruiser *Suzaya* and five destroyers, while the Americans only lost the light cruiser *Santa Fe*. Realizing the battle was lost, the surviving Japanese forces turned to retreat.

Unfortunately for the Japanese, none of their ships could escape the speed or guns of the *Iowa* and *New Jersey*. The American battleships did an efficient job of mopping up the remaining Japanese vessels, sinking the battleship *Nagato*, the battlecruisers *Kongo* and *Haruna*, the heavy cruisers *Chokai*, *Kumano*, and *Tone*, the light cruiser *Noshiro*, and eight destroyers. In return, the Japanese managed to sink the heavy cruiser *Wichita*, the light cruiser *Mobile*, and seriously damaged the battleship *Alabama*.

LOSSES: The Japanese lost all of their ships, two battleships, two battlecruisers, five heavy and two light cruisers, and fifteen destroyers, while the Americans lost two heavy and four light cruisers, and eighteen destroyers, and suffered severe damage to another light cruiser and a battleship.

Although putting up a terrific fight, the American battleships again overwhelmed the Japanese. Like with Nishimura and Shima, it is doubtful that the Japanese could have changed the outcome of this battle either. The Japanese could have held their deadly torpedoes back to directly attack the American battleships, but it is likely that the destroyers and cruisers would either be sunk or severely damaged by American gunfire before the Japanese could have reached a position to fire at the battleships.

But what if Nishimura, Shima, and Kurita managed to reach the landing zone? In the third scenario it is assumed that Kurita charged into the gulf and through the escort

carriers (a battle which will be played out later) after taking the same losses that he did historically (three cruisers sunk, another damaged), and linked up with Nishimura and Shima's forces, successfully executing the Japanese plan. At the landings Oldendorf again defended the transports, but would be outnumbered this time.

Surface Action #3: Kurita, Nishimura, & Shima vs. Oldendorf & transports
United States player: Gordon Cromley
Japanese player: Mark Gribbell

Similar to Surface Action #2, the Japanese quickly launched their torpedoes from both their destroyer and cruiser lines, which proved devastating to the American forces. The heavy cruisers *Portland* and *Shropshire* along with 20 destroyers were sunk, but the Japanese lost the light cruiser *Noshiro* and nine destroyers in return. Meanwhile the *Yamato* and two battlecruisers hooked around the American lines to directly attack the transports. Before the vulnerable US ships could break off, the Japanese sank 24 LSTs and six transports, along with the battleships *West Virginia* and *Pennsylvania*, the light cruiser *Denver*, and eight destroyers. However, the Americans managed to sink the battleship *Fuso*, the cruiser *Mogami*, and the light cruisers *Yahagi* and *Abakuma*.

Once the transports escaped the action, the Japanese turned to deal with the remaining American forces. Before the battle ended, the US lost the battleships *California*, *Tennessee*, and *Mississippi*, and the heavy cruisers *Louisville* and *Minneapolis*. In response the Americans managed to sink the battleships *Yamashiro* and *Nagato*, and eight destroyers.

LOSSES: The Americans lost five battleships, five cruisers, 28 destroyers, six transports, and 24 LSTs while the Japanese lost three battleships, four cruisers, and seventeen destroyers.

For the first time in this entire thesis, the Japanese forces outnumbered the Americans. The Japanese used their advantages well, holding off the Americans with their own slower battleships while sailing straight for the transports with their faster capital ships. With the loss of some transports and most of their LSTs, the American landings were severely disrupted, but it is likely that the remaining transports would still be able to unload their cargo, just not for some time. Oldendorf's force fought competently, but was unable to stop the Japanese. However, given the time that it would take for the Japanese to complete this action, the surviving ships would be met with overwhelming air power from Task Force 38, which would almost certainly sink most, if not all, of the Japanese survivors, turning the victory into a Pyrrhic one.

Although the Japanese won a clear victory, there are a few variables that were not accounted for in the battle. First off, the surviving American escort carriers would be launching strikes against the Japanese fleet throughout the battle, and even though the escort carriers did not carry the necessary ordinance to seriously damage the Japanese battleships, the planes could damage the smaller vessels, much as they did historically with the cruisers *Chokai*, *Suzaya*, *Chikuma*, and *Kumano* during the Battle of Samar.

Secondly, American gunnery radar was not represented. The battleships *West Virginia*, *California*, and *Tennessee* were equipped with the latest gunnery radar, and at the Battle of Surigao Strait, open fired at a range of 22,800 yards, an incredible feat for a

night action⁷. During the Battle of Samar, the Japanese engaged the American escort carriers usually at a range of less than ten nautical miles (about 20,000 yards), but were only able to sink a single escort carrier.

However, the Battle of Samar is not entirely indicative of the Japanese accuracy for two reasons. First, Admiral Kurita believed that he was engaging the whole of Task Force 38, and so had the sights on his guns aimed to shoot at fleet carriers, not the much smaller escort carriers, which threw off the aim. Secondly, the Japanese also used armor piercing shells during the battle, which would pass right through the small hulls of the escort carriers, making a true determination of hits scored nearly impossible. Even so, it is reasonable to believe that the American battleship fire would be generally more accurate than the Japanese, but, that may not have stopped Kurita's fleet from sinking many of the transports.

But what if Kurita managed to make it to the transports without Oldendorf protecting them? In this final action it is given that the Battle of Surigao Strait proceeded as it did historically, so Nishimura and Shima could not join up with Kurita. Historically Oldendorf would have been able to intercept Kurita before the Japanese reached the landing area⁸, but testing what would happen if Oldendorf were unable to do so proved interesting.

Surface Action #4: Kurita vs. Escort carriers, transports, and then Oldendorf
United States player: Mark Gribbell
Japanese player: Gordon Cromley

After spotting Kurita's attack force, the American escort carriers launched a strike, which slightly damaged the cruisers *Kumano* and *Tone*, heavily damaged the cruisers *Suzaya* and *Haguro*, and sank two destroyers. In the ensuing surface action, the

Americans sacrificed their destroyers and destroyer escorts in a desperate attempt to allow their escort carriers to break off. Despite losing the ten destroyer escorts and three destroyers, the Americans still lost six escort carriers to the Japanese warships. The only Japanese loss was the light cruiser *Yahagi*, which, almost comically, came too close to the escort carriers and was sunk by their AA guns.

Once the escort carriers were swept out the way, the Japanese proceeded to the landing zones to attack the transports, but not before another strike from the escort carriers came in. The cruisers *Kumano*, *Chikuma*, and *Suzaya* were hit, while the *Myoko* was severely damaged, and three destroyers sunk.

When they reached the transports, the Japanese eliminated the few defenders of the transports (four destroyers, which took an incredible amount of punishment before sinking), and proceeded with their own turkey shoot. 33 LSTs and 21 transports were destroyed before the carnage ended (only three transports survived), and, with their mission complete, the Japanese proceeded south to leave the area.

However Oldendorf's bombardment force finally intercepted Kurita's fleet before they could escape. With their cruisers damaged, their battleships outnumbered, and possessing a greater speed than the American battleships, the Japanese quickly tried to outmaneuver the enemy fleet and continue on their journey. In the ensuing running battle, the Japanese sank 23 destroyers, inflicted light damage to the light cruiser *Columbia* and battleship *Pennsylvania*, and left the light cruiser *Denver* dead in the water. In return the Americans sank five destroyers, four heavy cruisers (the *Haguro*, *Kumano*, *Suzaya*, and *Myoko*), the battleship *Nagato*, and, after a lucky hit in her engine spaces, the battlecruiser *Haruna*.

LOSSES: The Americans lost ten destroyer escorts, thirty destroyers, six escort carriers, and, most importantly, 21 transports and 33 LSTs. The Japanese lost a battleship, a battlecruiser, four heavy and one light cruiser, and ten destroyers, but Kurita succeeded enormously in his mission to sink the American landing forces at Leyte.

One single result stands out from this play testing. Even with the loss of the *Musashi* and, historically, most of his heavy cruisers, Kurita was still more than capable of completely annihilating the American landing force at Leyte. With the loss of almost all of their transports, the troops on Leyte would be cut off from supplies until the next convoy would arrive on 29 October (Task Group 78.8)⁹.

How would the Army troops fare in the meantime? Although cut from supplies, the American troops would probably still be able to hold out on Leyte. Essential supplies may have been able to be flown into Tacloban airfield and the Third and Seventh fleets would still be able to offer massive fire support. On the flip side, the Japanese on Leyte would be unprepared to launch a large offensive to drive the Americans off the island, and would have little time to plan for such an operation. Usually when the Japanese planned hasty operations the results would often turn out worse than if they had properly prepared for an attack¹⁰. Overall, American Army operations in the Philippines would probably be set back a month or two. However, it is unlikely that Navy led invasions in 1945 (Iwo Jima and Okinawa) would be affected. This battle also would not affect the progress on the Atom bomb, which would still be designed, tested, used, and have ended the war at the same time.

But Oldendorf waiting for Kurita would make this possibility moot. The results of a battle between Kurita and Oldendorf protecting the transports would probably be a mix of the third and fourth surface actions played. The faster Japanese capital ships may be able to maneuver around Oldendorf and sink a few transports, but the American force would also be able to destroy much of Kurita's force as well. Also, by proceeding to the landing area Kurita would be staying in the area long enough for Task Force 38 to return and launch a devastating strike against the Japanese fleet.

One can also partially extrapolate what may have happened if Nishimura and Shima's forces managed to attack the landing zones unhindered (say, if Oldendorf was occupied with Kurita to the north). Given the smaller size of their forces and the slower speed of their battleships, Nishimura and Shima probably would not destroy as much as Kurita, but the bulk of the transports and LSTs would most likely not survive. Even a pair of Japan's oldest battleships could smash the landings if given the chance.

What if the *Musashi* was present in these battles with Kurita? Against Task Force 34, the results would only be slightly changed, with the Americans probably losing a few battleships, but the *Musashi* and the rest of Kurita's force would still be sunk under the cascade of 16" shells. But if the *Musashi* was available in the third surface battle, the Japanese may very well have not only destroyed the entire transport and LST force, but Oldendorf's forces as well. The addition of the *Musashi* may also have enabled the Japanese to actually fully engage Oldendorf in the fourth surface battle with a reasonable chance of success. This highlights the importance of the *Yamato* battleships during the Battle of Leyte Gulf. The *Yamatos* are the principal threat against the American forces by far. Their extensive armor allowed the *Yamato* to hold off many attacks by

Oldendorf's battleships without suffering any damage. With the *Yamatos* the Japanese have a threat, without them the Imperial Navy is doomed.

But the result remains. Given the proper circumstances, circumstances that Kurita almost found himself in, the Japanese could have crushed the American transport fleet at Leyte Gulf despite Japan's lack of airpower. Given that the historiography of World War II naval combat consistently states the supremacy of the aircraft carrier over the battleship, this result questions such a claim. Are battleships truly obsolete? Did the aircraft carrier really show its supremacy?

¹ Hoyt, Edwin P., *The Battle of Leyte Gulf, the death knell of the Japanese Fleet*, Weybright and Talley, New York, 1972.

² Morison, Samuel Eliot, *History of the United States Naval Operations in World War II, Volume XII, Leyte, June 1944 – January 1945*, Little, Brown and Company, Boston, 1958.

³ Macintyre, Donald, *Leyte Gulf, Armada in the Pacific, Ballentine's Illustrated History of World War II*, battle book no. 11, Ballentine Books Inc., New York, New York, 1969.

⁴ Hoyt, *The Battle of Leyte Gulf*.

⁵ Hoyt, *The Battle of Leyte Gulf*.

⁶ Keegan, John, Ed., *Atlas of the Second World War*, Times Books, London, 1989.

⁷ Bennett, *Naval Battles of World War Two*, 231.

⁸ Bennett, *Naval Battles of World War Two*, 240.

⁹ Morison, *History of United States Naval Operations in World War II; Volume XII, Leyte*, 417.

¹⁰ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 290 – 291.

Part Four: The End of an era?



The four *Iowa* class battleships sail in formation for the first and last time on 7 June 1954. The *Iowa* is in the foreground, followed by the *Wisconsin*, *Missouri*, and *New Jersey*.

“I went down and personally saw the Secretary of Defense (Melvin R. Laird) and was ordered from the White House that the ship (the USS *New Jersey*) should be deactivated because it was impeding the peace negotiations (in Vietnam).”
Senator John Warner

The list of ships lost in the Second World War is a long one, and the number of capital ships, by definition battleships, battlecruisers, and pocket battleships, sunk during the conflict is thirty-six. Of these, nineteen were sunk by aircraft, which would seem to weigh heavily against the battleship, but an in-depth look proves revealing.

The entire list of capital ships sunk in World War II is as follows: the battleships *Bretange*, *Provence*, *Richelieu*, *Bismarck*, *Tirpitz*, *Royal Oak*, *Barham*, *Queen Elizabeth*, *Valiant*, *Prince of Wales*, *Littorio*, *Roma*, *Ise*, *Hyuga*, *Fuso*, *Yamashiro*, *Mutsu*, *Yamato*, *Musashi*, *Marat*, *Oklahoma*, *Arizona*, *California*, and *West Virginia*, the battlecruisers *Scharnhorst*, *Repulse*, *Hood*, *Conti di Cavour*, *Caio Dulio*, *Kongo*, *Haruna*, *Kirishima*, and *Hiei*, and the ‘pocket battleships’ *Admiral Scheer*, *Lützow*, and *Admiral Graf Spee*.

Of these vessels, seventeen were sunk in harbor, the *Bretange*, *Provence*, *Richelieu*, *Tirpitz*, *Royal Oak*, *Queen Elizabeth*, *Valiant*, *Littorio*, *Ise*, *Hyuga*, *Marat*, *Oklahoma*, *Arizona*, *California*, *West Virginia*, *Cavour*, *Caio Dulio*, *Haruna*, *Admiral Scheer*, and *Lützow*, all by aircraft except the *Bretange*, *Provence*, *Queen Elizabeth*, *Valiant*, and *Royal Oak*. However, the ships sunk in harbor should not be counted in comparing the battleship and aircraft totals given the fact that ten of these vessels served one function or another later in the war. The *Lützow* was turned into a gun platform, and Russians crammed every AA gun they could onto the bottomed *Marat*. The *Provence*, *Richelieu*, *Queen Elizabeth*, *Valiant*, *Dulio*, *Littorio*, *California*, and *West Virginia* were all salvaged and returned to service, although some served more notably than others. Of the other ten ships, there are three connected reasons why they were not repaired. Either the ship was too heavily damaged from capsizing or magazine explosions (the *Bretange*, *Tirpitz*, *Oklahoma*, and *Arizona*), too old to be considered worthwhile (the *Royal Oak*,

and again, the *Bretange*), or there was not enough resources or time before the war ended to repair the ship (the *Ise*, *Hyuga*, *Haruna*, *Cavor*, *Admiral Scheer*, and again, the *Tirpitz*).

But attacking and sinking a ship in harbor is far easier and different than in a battle on the high seas. Fifteen capital ships were sunk while at sea in World War II. Submarines sank two (the *Barham* and *Kongo*), while eight were sunk by or as the result of surface actions (the *Graf Spee*, *Scharnhorst*, *Bismarck*, *Hood*, *Kirishima*, *Hiei*, *Fuso*, and *Yamashiro*), and only five were sunk by air attack (the *Repulse*, *Prince of Wales*, *Roma*, *Yamato*, and *Musashi*). Of the eight sunk by surface actions, only three were not sunk by enemy capital ships, the *Graf Spee*, *Hiei*, and *Fuso*. The *Graf Spee* was scuttled after suffering damage by British cruisers of River Plate, and her Captain feared another engagement. The *Hiei* was crippled by several American cruisers in a night battle during the First Battle of Guadalcanal and finished off by aircraft in the morning, but it is important to note that without the damage caused by the cruisers, the *Hiei* would never have been sunk in that battle. Finally, the *Fuso* was sunk by numerous torpedo hits from American destroyers.

The other five ships were sunk by direct capital ship gunfire. The *Yamashiro* was sunk during the Battle of Surigao Strait under fire from destroyers, cruisers, and several battleships, and the battleship *Washington* sank the *Kirishima* at the Third Battle of Guadalcanal. In the Atlantic, the British battleship *Duke of York* sank the German battlecruiser *Scharnhorst*, and the German battleship *Bismarck* sank the British battlecruiser *Hood* in a similar fashion to many battlecruisers lost at Jutland in 1916.

The *Bismarck* experienced an interesting fate. After sinking the *Hood*, the entire Royal Navy attempted to hunt down the German dreadnought, but the *Bismarck* almost made it to France. A last ditch attack by torpedo planes from the carrier *Ark Royal* disabled the battleship's steering, allowing the British battleships *Rodney* and *King George V*, and the cruisers *Dorsetshire* and *Norfolk* to catch up and sink her after dozens of hits from 16", 14" and 8" shells and several torpedoes. Although aircraft disabled the *Bismarck*, the British surface ships delivered the final blow. Also, a rough comparison of the amount of time that it would take for the *Ark Royal*'s aircraft to damage and sink the *Bismarck* to the British surface ships is revealing. Estimating that one torpedo equals approximately two heavy shells (14" or 16"), that the *Bismarck* took roughly fifty hits from these heavy shells, that each strike of twelve torpedo planes from the would score three hits (a generous assumption), and that the *Ark Royal* would be able to launch two or three strikes a day, it would take three or four days and roughly eight strikes to sink the *Bismarck*, where it took the British capital ships less than four hours¹. It is also interesting to note that the American *Essex*, a carrier significantly larger than the *Ark Royal*, only carried 36 torpedoes in her magazines². Even if the *Ark Royal* carried the same number of torpedoes, it is likely that she would run out of them before her planes could sink the *Bismarck*.

An analysis of the ships sunk by air attack proves even more interesting. The *Roma* was sunk under rather exceptional circumstances, when a new German 'Fritz - X' radio controlled glide bomb started a fire that could not be put out before it reached a magazine. Land-based G3M and G4M bombers carrying torpedoes sunk the *Prince of Wales* and *Repulse*, while only the *Yamato* and *Musashi* were actually sunk by carrier

aircraft, and the *Yamato* only because the Japanese gave the Americans a chance to sink her during the Okinawa campaign. The *Yamato* and *Musashi* were also sunk by attack forces of hundreds of bombers, large enough to sink *any* ship, not just a battleship. Also, given the fact that all five of these ships did not possess powerful and/or effective AA armaments do not make the triumph of the attacking aircraft impressive³. An *Iowa* class battleship and *Alaska* class battlecruiser⁴ in place of the *Prince of Wales* and *Repulse* might have actually beaten off the Japanese bomber attacks. It is also important to note that none of these five ships possessed any friendly fighter cover when they were sunk. A significant fighter CAP (Combat Air Patrol) over the *Prince of Wales* and *Repulse*, as well as the *Roma*, might have also allowed the three ships to survive. However, as displayed numerous times in the games of Philippine Sea and Leyte Gulf, it is doubtful that even a large CAP over the *Yamato* and *Musashi* would allow them to endure the American air attacks. In summary, with these five ships in mind the triumph of the airplane over the battleship is hollow. The five capital ships in question neither had any effective fighter protection, nor did they have the ability to adequately protect themselves against their attacks. Therefore, the most dangerous situation for a capital ship was a surface action, not an air attack.

But the demise of the battleship goes beyond the losses of World War II. There are many reasons for the disappearance of the battleship from the world's oceans. First, the raid on Pearl Harbor forced the US Navy's leaders to rely on its aircraft carriers instead of its battleships, not necessarily because they wanted to, but because they had to. The raid thrust the aircraft carrier into a position of prominence, which was greatly enhanced at the Battle of Midway. At Midway, a small American carrier force defeated

the largest fleet the Japanese ever assembled, and no number of Japanese battleships could change that fact.

Moreover, due to a general unwillingness to utilize the vessels at hand, the Axis powers often did not deploy their battleships in situations in which they could make a serious difference. This author does not believe that the Axis could have won the Second World War, but the use of their battleships in two different theaters could have vastly expanded the Allied casualty lists. The first of these theaters is the Mediterranean in 1940 and 1941 with the Italian Navy. Their central position in the Mediterranean put a serious rift into the British Empire, and also allowed Italian land based air more flexibility than the British. The Italians also had the most modern battle fleet in the world as of Mussolini's declaration of war in 1940, with two new battleships and four battlecruisers modified within the previous five years. Except for their lack of radar, the Italian capital ships vastly outclassed their British counterparts; the secondary armament on the *Littorio* battleships even outranged the main armament on the British battleship *Warspite*!⁵ However, the British did hold a major advantage in aircraft carriers, of which the Italians had none. However, a German commitment of Ju-87 'Stuka' dive-bombers would be a great asset to the Italians. Ju-87s did manage to seriously damage the carrier *Illustrious* at one point, but the Luftwaffe also continuously overstated their victories. The Germans claimed to have sunk the British carrier *Ark Royal* several times, and the Luftwaffe even claimed that they sunk the American carrier *Wasp*.

The Italians seemed to be spooked into submission after the Battle of Calabria when the *Warspite* scored a hit on the Italian battlecruiser *Giulio Cesare* at long range⁶. Although the Italian Navy was also seriously damaged at the Battle of Cape Matapan and

the raid on Taranto, they still had a battleship and three battlecruisers available in mid 1941. Cooperation with the Wehrmacht and Kriegsmarine could have put a serious strain on British resources. If, in May 1941, the Italian Navy made a major foray, coupled with Rommel's offensive in Africa, along with an attempted breakout of the *Bismarck* in the North Atlantic, it is unlikely that the British would have been able to stop any one of the attacks, much less all three.

A second and perhaps even more critical theater where battleships could have greatly changed the outcome is Guadalcanal in late 1942 and early 1943. The Japanese used their *Kongo* battlecruisers well, but remained unwilling to commit more powerful battleships, specifically the *Yamato*. As mentioned earlier, the *Yamato* and *Musashi* were both sunk by hundreds of attacking planes, but the Allied forces would have been lucky if they could scrape up a *total* of one hundred planes in the entire southwest Pacific in late 1942. Although the *Yamato* could have been disabled by a few lucky torpedo hits, it is more likely that she could have survived numerous attacks and then pounded Henderson Field to bits while protecting Japanese transports landing troops on the island. The only chance the Americans would have had to stop the *Yamato* would have been their own fast battleships, specifically, the *North Carolina*, *Washington*, and *South Dakota*. The US Navy was not reluctant to risk its best battleships, and it paid off in the end. Both the *North Carolina* and *South Dakota* played a major role in beating off air attacks against the carrier *Enterprise* in the Battles of Eastern Solomons and Santa Cruz respectively. Most prominently, the *Washington* practically delivered the final victory in the Third Battle of Guadalcanal all by herself when, at the critical moment, she surprised and

destroyed the *Kirishima*. The willingness of the Americans to use everything they had at Guadalcanal, including their battleships, is a major reason why they won the campaign.

Beyond Pearl Harbor and Midway, there were several more strikes against the battleship that cropped up after World War II. With the destruction of the German and Japanese Navies, there were no other viable enemy naval forces in the world to contest the seas with the American Navy. The Soviets only had three outdated battleships, which would be no match to the combined Royal and US Navies. The expense of maintaining battleships also assisted in their deactivations. Finally, the introduction of nuclear weapons and the belief that the next war would only be a nuclear war not only cut into the battleship, but into many other conventional weapons as well. It was probably only President Truman's personal penchant for the *Missouri* that allowed her to remain in service several years after World War II.

This author does not advocate the idea that battleships are better than carriers, but rather that battleships still have a place in the Navy. Just how well would the battleship do in the modern world? With the demise of the Soviet Union, there are few remaining armor piercing weapons remaining in the world's inventory available to sink a battleship⁷, and if the lessons of the *Prince of Wales* and *Repulse* were learned, any battleship with adequate air cover would be extremely difficult to sink. Also, a battleship can carry as many missiles as any cruiser or destroyer, and has the additional advantage of their big guns. A major difference between now and World War II is the advancement of the submarine, but torpedoes that sink enemy submarines can be dropped from helicopters operated off of battleships. All in all, battleships have a better chance of

surviving and completing a difficult mission then any other ship, save perhaps submarines, but only when keeping in mind the latter's stealth abilities.

But the only battleships remaining in the world are the celebrated American *Iowa* class, consisting of the *Iowa*, *New Jersey*, *Missouri*, and *Wisconsin*, all now retired from service. These four united speed, protection, and firepower in a unique combination that has continually demonstrated itself in the wars since World War II. Time and again the *Iowas* have proven their efficiency and firepower in Korea, Vietnam, and Persian Gulf, yet keeping them in service has always been a challenge. This is mainly due to the often absurd arguments made by congressmen during debates to reactivate the *Iowas*. One Senator even stated that a completely unarmored cruiser "was 'perhaps' more survivable than the *New Jersey*"⁸.

Even so, the *Iowas* were decommissioned and stricken from the Navy list. Fortunately these four battleships managed to survive the scrapper's torch long enough to become museum ships⁹ and remain available in case the big guns of a battleship are needed once again. "With the retirement of the last of this class in 1992, the era of the cannon-armed ship-of-the-line came to an end, after a run of nearly four centuries. Maybe."¹⁰

¹ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 180.

² Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 88.

³ Jordan, *An Illustrated Guide to Battleships and Battlecruisers*.

⁴ The official US Navy designation of the *Alaskas* was 'large cruiser' but they displayed most of the properties of a classic battlecruiser.

⁵ Jordan, John, *Battleships and Battlecruisers*, Arco Publishing, Inc., New York, 1985, 51.

⁶ Bennett, *Naval Battles of World War II*, 115.

⁷ Muir, Malcom, *The Iowa Class Battleships*, Bath Press, Great Britain, 1987, 128.

⁸ Muir, *The Iowa Class Battleships*, 121.

⁹ It is uncertain what the fate of the *Iowa* will be, but scrapping seems to be a much less likely option then in the past.

¹⁰ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 100.

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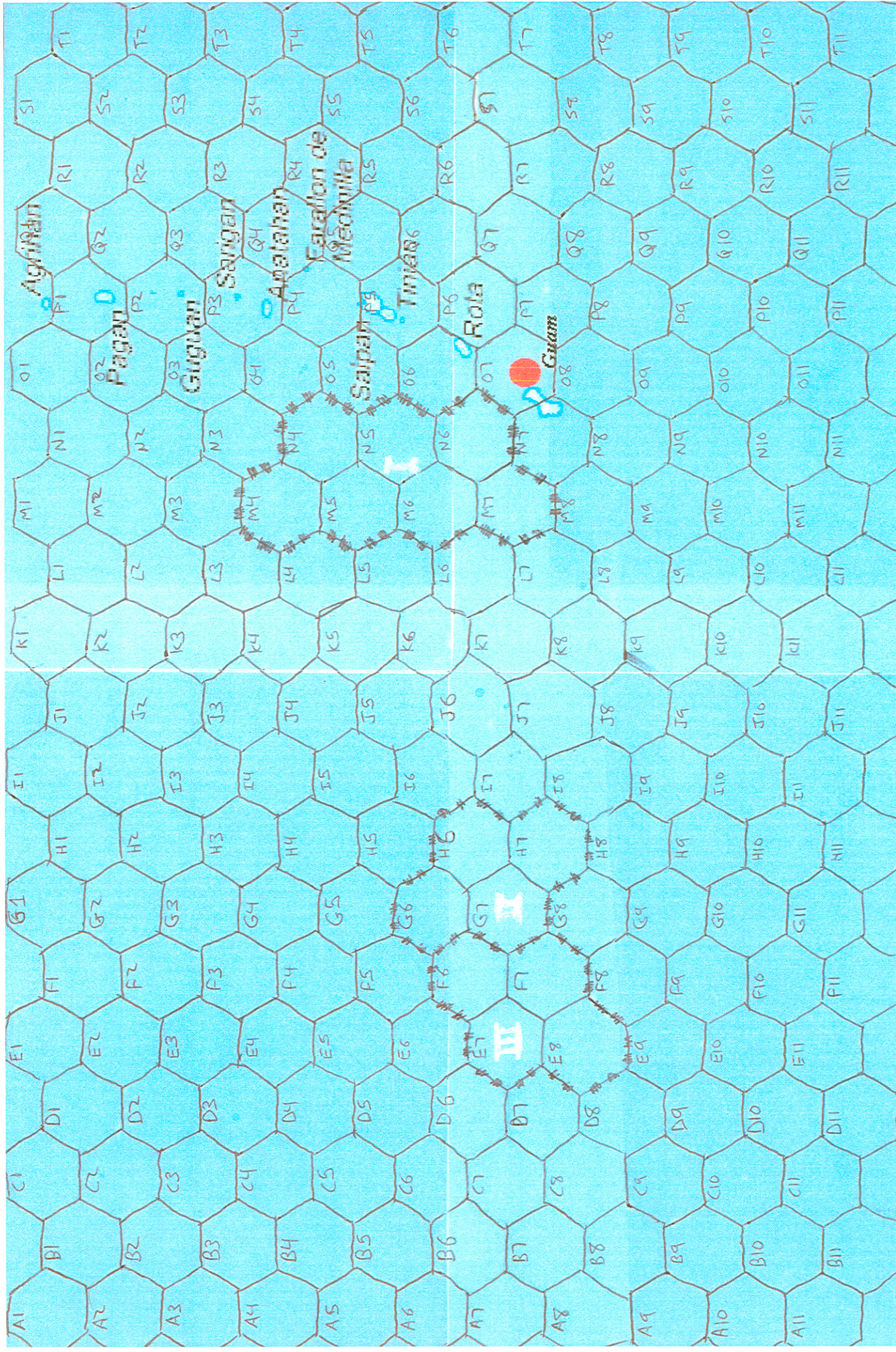
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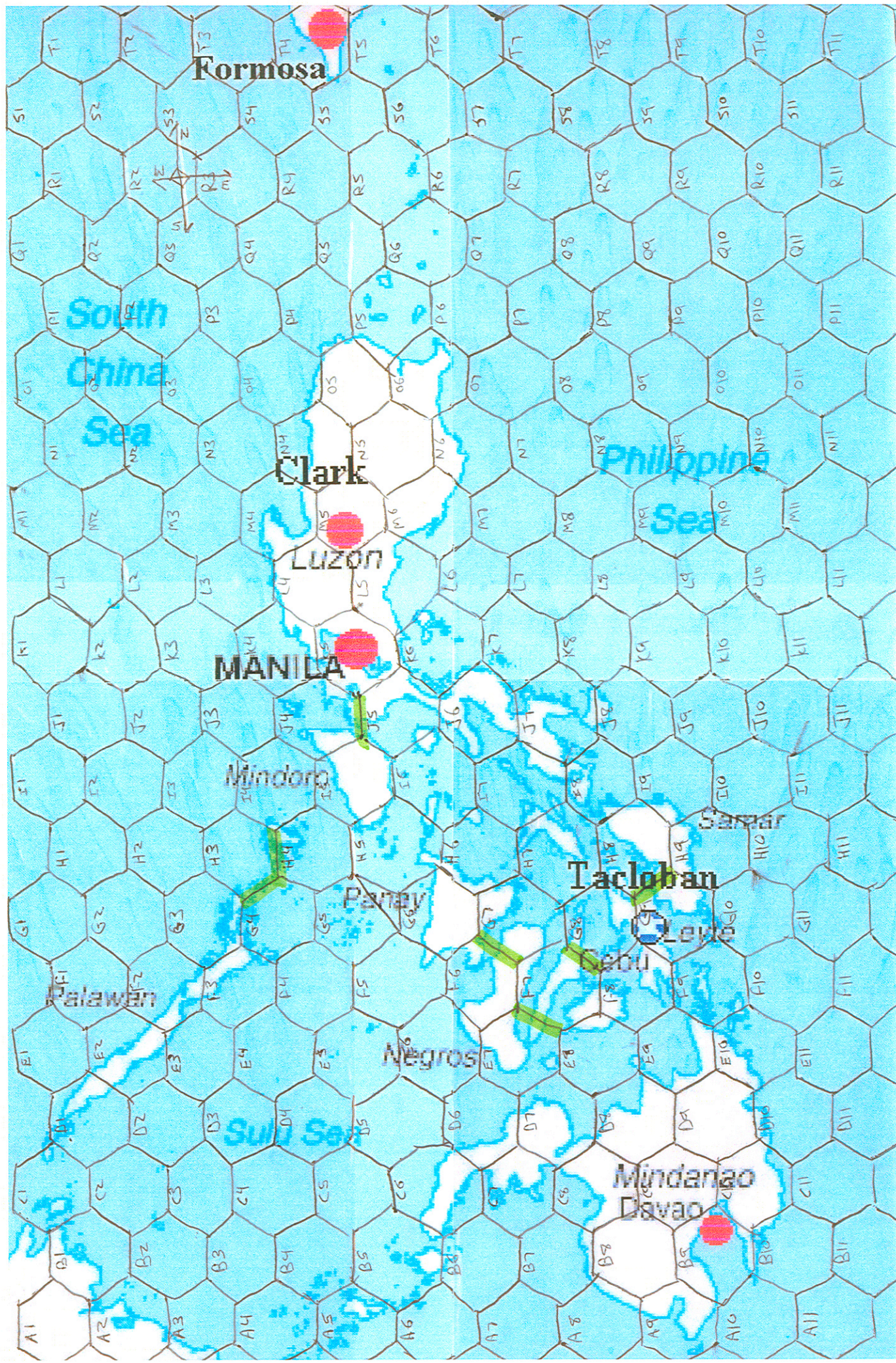
Appendices



The carriers *Saratoga*, *Enterprise*, *Hornet (II)*, and *San Jacinto* after the war. These four ships represent the major carrier classes (except for the *Wasp*, which was sunk in 1942) that defeated Japan in World War II.

APPENDIX A MAPBOARDS

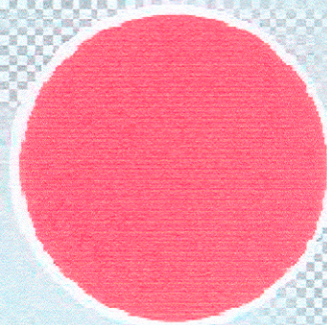




APPENDIX B
AIR OPERATIONS CHARTS

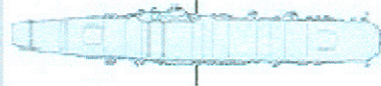
Philippine Sea

Imperial Japanese Operations Card




CV Taiho

7 Capacity 3/2 Launch

ON BOARD	
Ready	Arming
	


CVL Chitose

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	


CVL Chiyoda

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

CVL Ryuho

3 Capacity 1/1 Launch

ON BOARD	
Ready	Arming
	

A Force

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

B Force

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

C Force

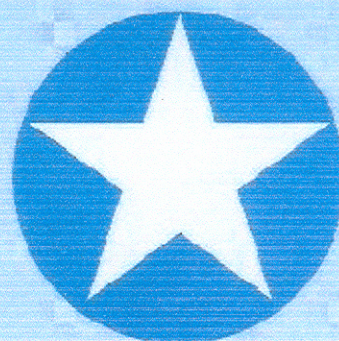
Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Supply Force

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Philippine Sea

United States Operations Card



CV Bunker Hill 0 Capacity 5/8 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CV Enterprise 8 Capacity 4/2 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CV Essex 0 Capacity 5/8 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CV Hornet (II) 0 Capacity 5/8 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming		
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CVL Belleau Wood 4 Capacity 2/11 Launch 4 Capacity ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CVL Cabot 2/11 Launch 4 Capacity ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CVL Cowpens 5/11 Launch 4 Capacity ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CVL Langley (II) 5/11 Launch 4 Capacity 2/11 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming		
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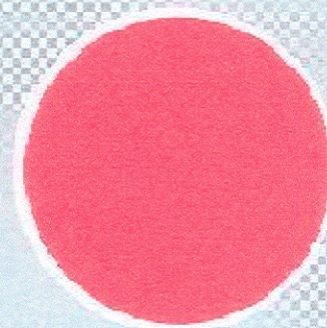
CVL Monterey 4 Capacity 2/11 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CVL Princeton 4 Capacity 2/11 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming			CVL San Jacinto 4 Capacity 2/11 Launch ON BOARD <table border="1"> <tr> <td>Ready</td> <td>Arming</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Ready	Arming		
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Task Group 58.1 <table border="1"> <tr> <td>Normal State</td> <td rowspan="2">Ships</td> <td>High CAP</td> </tr> <tr> <td>Max Strike</td> <td>Low CAP</td> </tr> </table>	Normal State	Ships	High CAP	Max Strike	Low CAP	Task Group 58.2 <table border="1"> <tr> <td>Normal State</td> <td rowspan="2">Ships</td> <td>High CAP</td> </tr> <tr> <td>Max Strike</td> <td>Low CAP</td> </tr> </table>	Normal State	Ships	High CAP	Max Strike	Low CAP	Task Group 58.3 <table border="1"> <tr> <td>Normal State</td> <td rowspan="2">Ships</td> <td>High CAP</td> </tr> <tr> <td>Max Strike</td> <td>Low CAP</td> </tr> </table>	Normal State	Ships	High CAP	Max Strike	Low CAP
Normal State	Ships		High CAP														
Max Strike		Low CAP															
Normal State	Ships	High CAP															
Max Strike		Low CAP															
Normal State	Ships	High CAP															
Max Strike		Low CAP															

Task Group 58.4 <table border="1"> <tr> <td>Normal State</td> <td rowspan="2">Ships</td> <td>High CAP</td> </tr> <tr> <td>Max Strike</td> <td>Low CAP</td> </tr> </table>	Normal State	Ships	High CAP	Max Strike	Low CAP	Task Group 58.7 <table border="1"> <tr> <td>Normal State</td> <td rowspan="2">Ships</td> <td>High CAP</td> </tr> <tr> <td>Max Strike</td> <td>Low CAP</td> </tr> </table>	Normal State	Ships	High CAP	Max Strike	Low CAP
Normal State	Ships		High CAP								
Max Strike		Low CAP									
Normal State	Ships	High CAP									
Max Strike		Low CAP									

Leyte Gulf

Imperial Japanese Operations Card



CV Shinano

7 Capacity 2/1 Launch

ON BOARD	
Ready	Arming

CV Zuikaku

7 Capacity 3/2 Launch

ON BOARD	
Ready	Arming

CVL Chitose

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming

CVL Chiyoda

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming

CVL Zuiho

3 Capacity 2/1 Launch

ON BOARD	
Ready	Arming

Carrier Force

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Force A

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Force C

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Second Striking Force

Normal Strike	Ships	High CAP
Max. Strike		Low CAP

Clark Base

20 Capacity 10/5 Launch

Normal Strike	ON GROUND		High CAP
	Ready	Arming	
Max. Strike			Low CAP

Davao Base

12 Capacity 3/2 Launch

Normal Strike	ON GROUND		High CAP
	Ready	Arming	
Max. Strike			Low CAP

Formosa Base

40 Capacity 20/10 Launch

Normal Strike	ON GROUND		High CAP
	Ready	Arming	
Max. Strike			Low CAP

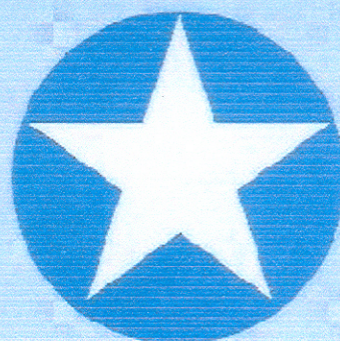
Manila Base

15 Capacity 7/4 Launch

Normal Strike	ON GROUND		High CAP
	Ready	Arming	
Max. Strike			Low CAP


Leyte Gulf

United States Operations Card #1




CV Enterprise

8 Capacity 4/2 Launch

ON BOARD	
Ready	Arming
	


CV Essex

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Franklin

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Hancock

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Hornet (II)

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Intrepid

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Lexington (II)

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CV Wasp (II)

9 Capacity 5/3 Launch

ON BOARD	
Ready	Arming
	


CVL Belleau Wood

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

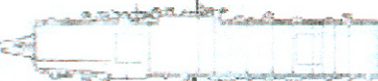
CVL Cabot

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

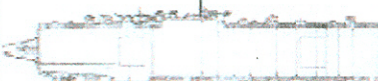
CVL Cowpens

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	


CVL Independence

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	


CVL Langley (II)

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

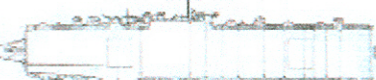
CVL Monterey

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

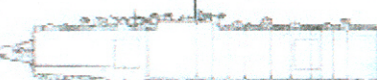
CVL Princeton

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

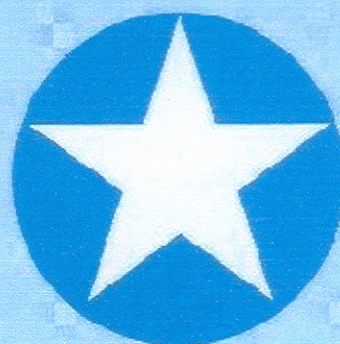
CVL San Jacinto

4 Capacity 2/1 Launch

ON BOARD	
Ready	Arming
	

Leyte Gulf

United States Operations Card #2



CVE Casablanca I

10/5 Capacity 4/2 Launch

ON BOARD	
Ready	Arming

CVE Casablanca II

5 Capacity 2 Launch

ON BOARD	
Ready	Arming

CVE Casablanca III

5 Capacity 2 Launch

ON BOARD	
Ready	Arming

CVE Casablanca IV

5 Capacity 2 Launch

ON BOARD	
Ready	Arming

4 CVE (Casablanca)

10/5 Capacity 4/2 Launch

ON BOARD	
Ready	Arming

CVE Sangamon

11/6 Capacity 4/2 Launch

ON BOARD	
Ready	Arming

Task Force 34

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 38.1

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 38.2

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 38.3

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 38.4

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 78.7

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 77.2

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 77.3

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Task Group 77.4

Normal Strike	Ships	High CAP
Max Strike		Low CAP

Tacloban Base

12 Capacity 4/2 Launch

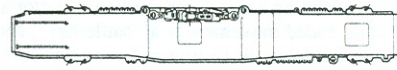
Normal Strike	ON GROUND		High CAP
	Ready	Arming	
Max Strike			Low CAP

APPENDIX C
AVALON HILL GAME RULES

BASIC GAME RULES FOR PLAYING

GUADALCANAL®

A World War II Battle Game



GUADALCANAL is a game recreating a turning point of World War II. Two players, commanding the Allied and Japanese forces, compete for victory or defeat by causing maximum damage to opposing units.

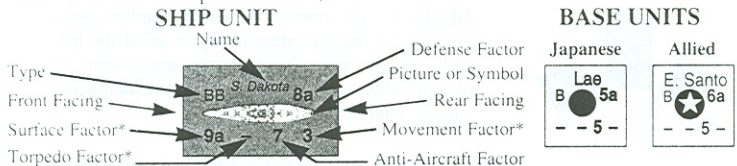
[1] GAME EQUIPMENT

Please examine the game's components while reading this section of the rules.

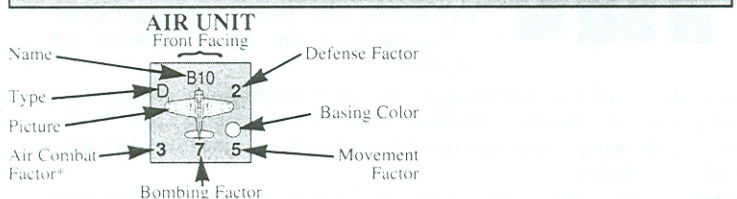
1a) GAMEBOARDS: There are three gameboards. Two are "Searchboards" showing the area in which the Guadalcanal campaign was fought. Searchboard edge colors and titles indicate which side uses each. Islands are indicated in green, and various setup areas are outlined and identified by Roman numerals. There is also a "Battleboard", which shows blank ocean and is used to resolve battles. On all gameboards, individual hexagons, each identified by a letter-number code, are called "hexes", and this grid regulates movement and positioning.

1b) PLAYING PIECES: The die-cut playing counters must be carefully punched out to provide the playing pieces. The numbers, symbols and colors (Allied dark blue and Japanese red print) on the counters provide game information, as shown below:

1b1) UNITS: The "units" represent the ships and aircraft present at the actual battle, plus the major Allied and Japanese bases. Important game information is printed on the units. Most are printed on both sides (back or "reduced strength" sides have a white stripe on the unit).



The letter part of Ship/Base defense factors are not used in the Basic Game.



See the back page of the Battle Manual for additional explanations.

(*) This information is not used in the Basic Game.

1b2) MARKERS: "Markers" are used to record game information.

MARKER NAME	FRONT SIDE	BACK SIDE	MARKER NAME	FRONT SIDE	BACK SIDE
Enemy Task Force	3?	3 Exact	Task Force	Task Force 16	
Free Roll (*)	FREE ROLL	FREE ROLL	Torpedo (*)	Allied 2	IJN 5
Hit	1 Hit	2 Hits	Turn	Side A TURN	Side B TURN
Surface Turn (*)	Side A Surface TURN	Side B Surface TURN	Date	DATE	DATE

1c) SEARCHBOARD SCREEN: This is placed between the two Searchboards so that each side can move in secret.

1d) OPERATIONS CARDS: These cards, one for each side, are used to organize units off the gameboards.

1e) RULES: This sheet contains the Basic Game rules of play.

1f) DICE: There are two "decimal" dice, numbered from "1" to "0". Always read the "0" as "10", the highest possible roll.

1g) BATTLE MANUAL: The booklet contains examples of play for rules clarification, scenarios, optional rules, and other material of interest.

[2] GENERAL GAME RULES

2a) SETTING UP THE GAME: Decide, in any mutually agreeable manner, the sides to command and scenario to play. Then, follow the directions in the General Scenario Setup Information section (7a in the Battle Manual), and the individual scenario setup information (7b, 7c, 7d, or 7e).

2b) TURNS: A game starts when all setup is complete, and is played in "Turns". A game ends when a scenario's required number of Turns has been played. Every Basic Game Turn is played in the following order:

2b1) THE ACTION PHASE: Use competitive die rolls to determine Sides A and B. For the Turn, Side B performs each step or phase first, then Side A does so. Perform the Action Phase in this order:

- 2b1.1) The Assembly Step: Assemble air units to "take off" and "fly".
- 2b1.2) The Ready Step: Shift air units from "Arming" to "Ready" boxes or vice-versa on the Operations Cards.
- 2b1.3) The Sea Movement Step: Secretly move task force markers.
- 2b1.4) The Air Movement and Search Step: All "flying" air units are moved on the Searchboards, and all searches conducted.

2b2) THE COMBAT PHASE: Individual battles are conducted in any order desired and determined by the Side A player. Individual battle combats are resolved on the Battleboard, in the following order:

- Setup the defending base and/or ship units, then, the opposing combat air units.
- Resolve all anti-aircraft combats, then all bombing combats.

2b3) THE AIR RETURN PHASE: Air units are returned to friendly task force markers and/or base units for "landing".

2b4) THE TURN RECORD PHASE: Advance the Turn markers.

2c) USING THE OPERATIONS CARDS: Ship and air units are placed in the various "areas" and "boxes" of the sides' Operations Cards to record their locations

and situations. Players are permitted to watch *everything* done on the opposing Operations Card. NOTE: In the Basic Game, the "Max. Strike", "High CAP" and "Low CAP" boxes are *not* used.

2c1) TASK FORCE AREAS: "Task force areas" are identified by names corresponding to those on a side's task force markers. Any units placed in a task force's boxes are considered to be located in the Searchboard hex occupied by the task force's marker. Ship units are kept in an area's "Ships" box, and "flying" air units are kept in the other boxes.

2c2) BASE AREAS: "Base areas" are identified by names corresponding to those on a side's base units. Air units placed in the boxes of a base are considered to be located in the Searchboard hex occupied by the base's unit. Base areas combine features of both the task force and named ship areas.

2c3) NAMED SHIP AREAS: Ship units that carry aircraft have "ship areas" with their names. Air units placed in a ship area's "Arming" and "Ready" boxes are considered to be located "On Board" the corresponding ship unit. Their ship unit is located in a "Ships" box in a task force area, so that its air units are also located in the Searchboard hex containing that task force marker.

2c4) CAPACITY AND LAUNCH FACTORS: Base and ship areas also contain printed game data. The "capacity" is the *maximum* number of air units that can be placed in the "On Board" or "On Ground" boxes at any one time. For example, the "Enterprise", with a capacity of "8", may never have more than eight air units located in its "Ready" and/or "Arming" boxes. The "launch factor" is the maximum number (front/back) of air units that can "take off" from a ship or base during a single Turn. For example, the "Enterprise" launch factor is "4/2" this means a "4" launch factor when the ship unit's front side is up, and a "2" launch factor when its back side is up.

2d) MULTIPLE UNITS TOGETHER—STACKING: Except where otherwise noted (ie., see 2c4, 4a2), there are no limits on the number of units and/or markers that can be placed in the same hex or Operations Card box. Simply stack the counters in or (if very crowded) near their locations.

2e) GENERAL MOVEMENT RULES: Dice do *not* determine movement—they resolve combats. Players may move any or all of their units as desired, in any order, subject to any limitations found elsewhere in the rules (ie., see 3c, 3d1, 3d2). A counter may be moved from hex-to-hex in any direction or combinations permitted by the grid and the counter's movement capabilities. Hexes may not be skipped or jumped. Movement may not be transferred from unit to unit or accumulated from Turn to Turn. Units that exit the Searchboards in the Basic Game are considered to be eliminated.

[3] THE ACTION PHASE

Competitively roll one die each and compare the results. Roll again to break ties. The high roll side is Side A for the Turn, and the low roll side is Side B for the Turn. During the Turn, Side B performs a step or phase, then Side A. Both sides should adjust their Turn marker to show their appropriate side (A or B). Then, perform the phase in this order:

3a) THE ASSEMBLY STEP: Any desired and available air units may "take off" now in order to "fly" during the Turn.

3a1) No air units may "fly" during night Turns (the dark-shaded Turns on the TIME RECORD TRACKS).

3a2) Only air units located in "Ready" boxes may "take off".

3a3) To show a "flying" air unit, move it from a "Ready" box to the appropriate "Normal Strike" box. At a base, shift an air unit from the base area's "Ready" to its "Normal Strike" box. For a ship, shift an air unit from the ship area's "Ready" box to the "Normal Strike" box of the task force area in which the ship unit is located.

3a4) The number of air units that may be shifted from a "Ready" box may not exceed its launch number (see 2c4).

3b) THE READY STEP: Any desired air units in an area's "Arming" box may now be shifted to that same area's "Ready" box, or vice-versa.

3c) THE SEA MOVEMENT STEP: The opposing player is *not* informed of this movement, which is secret on a side's own Searchboard. All desired task force markers are moved no more than one Searchboard hex per Turn. A task force marker may not be moved through a hexside that is *completely* green (ie., it is dry land). A counter that "enters" on a particular Turn is placed in a designated hex (see the scenarios) on that Turn, and that counts as its movement for the entry Turn.

3d) THE AIR MOVEMENT AND SEARCH STEP: All "flying" air units are now moved on the Searchboard. Although air units may be moved in any desired order, a player will normally wish to *first* move the scout air units, which are useful for searching, but not for combat. To move, an air unit(s) is placed on the Searchboard and moved from the location of its task force marker or base unit.

3d1) AIR MOVEMENT FACTORS: "Flying" units may be moved any number of Searchboard hexes equal to or less than their "movement factor".

3d2) AIR MOVEMENT RESTRICTIONS: "Flying" *scout* air units may be moved individually, as desired. All "flying" *combat* air units originating from the same hex *must* be moved and kept together as far as their movement factors allow (drop off units with fewer movement factors as their last hex is entered—if empty, they cannot participate in a battle).

3d3) AIR SEARCH: Air movement is made on a side's own Searchboard, and some or all of it may be kept secret, if desired.

3d3.1) Air Search Procedure: To "search", the controlling player announces the hex identification as an air unit(s) enters it. A unit(s) may be used to search all, some, or none of the hexes it enters, as the player desires.

3d3.2) Search Information: If there is nothing in an announced hex, the opposing player says so. If a task force marker(s) is in an announced hex, it is "spotted", and the opposing player *must* reveal that there is a task force marker(s) located in that hex, and the *exact* ship units present.

3d3.3) Spotting Reference: The searching player should place an enemy task force marker(s) in that hex on his own Searchboard, with its "Exact" side(s) up, and, as a memory aid, the exact information may be written down. No information regarding air units in the hex is revealed.

3d4) AIR STRIKES: "Air strikes" are represented by all air combat units that *end* their movement in a hex containing an opposing task force marker(s) or base unit, and these air combat units *must* be used for combat in that hex.

3d5) SEA SEARCH: After moving *all* "flying" air units, "sea searches" are conducted by calling out any desired hexes that contain one or more of the side's task force markers and/or a base unit. Search information for these hexes from the opposing is handled the same as in rules 3d3.2 and 3d3.3.

[4] THE COMBAT PHASE

Each hex containing a task force marker(s) and/or a base unit where *opposing* combat air units ended movement is a "battle hex", and is resolved as a separate "battle" on the Battleboard. During a Turn with more than one battle to resolve, the Side A player determines the order of their resolution. Then each battle is handled, individually, in turn, as covered below:

4a) BATTLE SETUP: In the Basic Game, *only* combats involving bomber types of aircraft ("D", "H", "M" or "T") are considered; opposing ship units in the same Searchboard hex or opposing combat air units in the same Searchboard hex do *not* have combats with each other. The counters used for a battle *must* be placed on the Battleboard. NOTE: Scout air units in the hex are not used for combat and are left in the Searchboard battle hex.

4a1) BASE SETUP: If *only* a base unit is in the hex, the controlling player removes the unit from his Searchboard (the base unit on the opposing Searchboard remains there, although any damage should be recorded on *both* identical base units), and places it in a hex near the center of the Battleboard. If there are also friendly ship units in the hex, a base unit is setup exactly the same as a ship unit (see below).

4a2) SHIP SETUP: Note the task force markers in the battle hex. Ship units are removed from these task force's "Ships" boxes on the Operations Card. These ship units may be setup as desired anywhere on the Battleboard, even if they were in separate task forces, as long as all units fit on the Battleboard, there is only one unit per hex, all face in the same direction (the front facing to a hexside) and there is at *least* one empty hex around all units.

4a3) AIR ATTACK SETUP: Now, all the opposing combat air units are removed from their Searchboard battle hex and setup. The air units are placed to show the enemy ship or base unit to be attacked:

4a3.1) Dive bomber ("D" type), Heavy bomber ("H" type) and Medium bomber ("M" type) air units are stacked directly on top of their target unit.

4a3.2) Torpedo bomber ("T" type) air units are placed adjacent to and with their front facings pointing at their target ship unit. If stacked, they must face the same direction. However, if attempting to attack a base unit, torpedo bombers are considered to be dropping bombs instead of torpedoes, and are placed directly on top of the base unit.

4b) GENERAL RULES FOR ALL COMBATS: All combats in *GUADALCANAL* are resolved similarly, as explained below:

4b1) ATTACK ANNOUNCEMENT: The attacker announces, in any desired order, that a unit(s) is attacking a specific *single* enemy "target" unit for an "individual combat". Even when a hex contains a stack of units, only one unit in the stack is selected as the target unit.

4b2) COMBAT MODIFIERS: "Combat modifiers" are added and/or subtracted to the numbers rolled on a die to resolve a combat. These modifiers come from involved units' factors (always positive) and/or their situations (see 4c2, 4d3, and 4d4). *For example, an air combat unit with a bombing factor of "4" has a "+4" combat modifier for bombing combat.* A "0" factor indicates that a unit can be used, but there is no modifier. A "-" factor indicates that there is no factor and the unit cannot participate in combats requiring the use of that factor. All of a side's combat modifiers in an individual combat are *cumulative*, and combined into a "total modifier".

4b3) COMBAT NUMBERS: After the total modifiers for each side are determined and announced, both players roll a die and add their side's total modifier to their die roll. The die roll plus or minus the side's total modifier equals the side's "combat number". **SPECIAL NOTE:** If the combat number is modified to less than "1", consider it to be a "1" for resolution purposes.

4b4) COMBAT RESOLUTION: Compare the combat numbers to resolve the combat and find the results, as follows:

Defender Is Equal or More: If the defender's combat number equals or exceeds the attacker's combat number, there is no damage. A "miss"!

Attacker Is More: If the attacker's combat number exceeds the defender's combat number, but is not two times as much, one hit is scored.

Attacker Is Two Times As Much: If the attacker's combat number exceeds the defender's combat number by two times, but not by three times, the defending unit is flipped over.

Attacker Is Three Times As Much: If the attacker's combat number exceeds the defender's combat number by three times or more, the defending unit is eliminated.

4b5) RECORDING AND EFFECTS OF DAMAGE: Any damage to a unit is recorded and applied *immediately*. Record damage to units as follows:

- **1 Hit:** If one hit is scored on a unit, stack a 1 hit marker on the unit. If there is already a 1 hit marker with the unit, flip the marker over so that the 2 hits marker side shows. If there is already a 2 hits marker, the unit is flipped over, with the effects covered under "Flipped" and "Eliminated", below. Any unit stacked with a hit marker (either side up) has *all* of its face up factors except for its movement factor reduced by "-1".

- **Flipped:** When a unit with its front side showing is flipped over, adjust it so that its back, or reduced strength, side is up and remove any hit marker. The factors on the unit's back side are now the ones that apply. If the back side of the unit says "ELIM" the unit is eliminated. When a unit with its back side already showing must be flipped over, it is eliminated instead.

- **Eliminated:** An eliminated unit is considered as destroyed and removed from play. If a base or ship unit is eliminated, all air units in that unit's "Ready" and/or "Arming" boxes on the Operations Card are *also* eliminated.

4c) ANTI-AIRCRAFT COMBAT: "Anti-aircraft combat" represents firing anti-aircraft guns at enemy aircraft. During anti-aircraft combat, the side with the base and/or ship unit(s) is the "attacker", and makes the decisions (subject to limitations found below) as to which which friendly unit(s) to use against which enemy unit(s).

4c1) RANGE: Anti-aircraft combat can be directed at an enemy air unit up to three Battleboard hexes from the ship or base unit. This three hex "range" can be counted through hexes containing ship, air or base units.

4c2) ATTACKER'S MODIFIERS: Anti-aircraft factors are a combat modifier for the attacking side, and each unit may have its anti-aircraft factor used only *once* per Combat Phase. If two or more units are used against the same enemy air unit, their anti-aircraft factors *must* be added together as a combat modifier. Other *possible* attacker combat modifiers are as follows:

4c2.1) A "-2" combat modifier applies if the target air unit is using high level bombing (see 4d1.2).

4c2.2) A "-1" combat modifier applies if the target air unit is using medium level bombing (see 4d1.3 and 4d1.4).

4c3) DEFENDER'S MODIFIER: The defending side's only combat modifier is the target air unit's defense factor.

4d) BOMBING COMBAT: Bombing combat represents aircraft dropping bombs or torpedoes on an enemy base or ship. It always takes place *after* anti-aircraft combat. During bombing combat, the side with the air units is the "attacker". The decision as to which which friendly unit(s) to use against which target unit(s) was already made during air attack battle setup (see 4a3).

4d1) BOMBING COMBAT CATEGORIES: There are a number of "categories" of bombing combat, as follows:

4d1.1) "Dive bombing" *must* be the category used by dive ("D" type) bomber units (also see 4a3.1).

4d1.2) "High level bombing" *must* be the category used by heavy ("H" type) bomber units (also see 4a3.1).

4d1.3) "Medium level bombing" *must* be the category used by medium ("M" type) bomber units (also see 4a3.1).

4d1.4) "Medium level bombing" *must* be the category used by torpedo ("T" type) bomber units when attacking the base unit. When attacking a ship unit, "torpedo bombing" *must* be the category used (also see 4a3.2).

4d2) COMBAT BY CATEGORY: Each category of bombing is handled as a separate combat, in any order desired by the attacker. *For example, a torpedo bomber unit and a dive bomber unit are both attacking the same enemy ship unit. The torpedo bombing combat is resolved, first then the dive bombing combat is resolved (or the order of resolution could be reversed, if desired).*

4d3) ATTACKER'S MODIFIERS: Bombing factors are a combat modifier for the attacking side, and each unit may have its bombing factor used only once per Combat Phase. If two or more units are making the same bombing category combat against the same enemy unit, their bombing factors *must* be added together as a combat modifier. Other *possible* attacker combat modifiers (also see the Battleboard's COMBAT DIE MODIFIERS CHART) are as follows:

4d3.1) A "+3" combat modifier applies for a torpedo bombing combat if any or all of the torpedo bomber units front facings are coming in on *both* sides of a target ship's front facing (an "anvil" attack).

4d3.2) A "-2" combat modifier applies for a torpedo bombing combat if any or all of the torpedo bomber units face a target ship unit's front and/or rear facing (the ship is "threading" the torpedoes).

4d3.3) A "+4" combat modifier applies for a *dive* bombing combat if the target unit is a ship unit that has a combat air unit(s) in its Operations Card "Ready" box. The defending player *must* reveal this when the total modifiers are calculated, but not before.

4d3.4) A "-5" combat modifier applies for a *high* level bombing combat if the target unit is a ship unit, and a "-1" combat modifier applies for a *high* level bombing combat if the target unit is a base unit.

4d3.5) A "-5" combat modifier applies for a *medium* level bombing combat if the target unit is a ship unit, and a "-4" combat modifier applies for a *medium* level bombing combat if the target unit is a base unit.

4d4) DEFENDER'S MODIFIERS: The defending side's only combat modifier is its target ship or base unit's defense factor.

4e) BATTLE'S END: At the end of each battle, all units are returned to their Searchboards and/or Operations Cards.

4e1) SHIP UNITS AND TASK FORCE REORGANIZATION: At the end of a battle, after all combats are completed, all surviving ship units (with all damage recorded) are shifted to the "Ships" boxes of their task force markers in the battle hex, not necessarily the same ones they were in earlier if more than one task force marker is in the same hex. This "reorganization" may be performed both on units just in battle and, also, in other hexes that were uninvolved, and may not be performed at any other time during a Turn. If all ship units are eliminated or removed from a task force's "Ships" box, its task force marker *must* be removed from the Searchboard. Any extra task force marker (currently off the Searchboard, even if just removed) may be newly placed in a Searchboard hex containing a ship unit(s) if one or more of those ship units is placed in its "Ships" box on the Operations Card.

4e2) BASE UNIT: If in a battle, a base unit is returned to its Searchboard hex with any damage recorded identically on *both* units on both Searchboards. If eliminated, both identical units are removed from play.

4e3) AIR UNITS: Air units (with all damage recorded) are returned to the Searchboard's battle hex.

[5] THE AIR RETURN PHASE

After all battles have been completed, all air units must return and "land" in available Searchboard hexes, if possible.

5a) WHERE TO LAND: An air unit may "land" anywhere possible, given these restrictions:

5a1) BASING: Air units with green basing dots must "land" in a hex containing a friendly base unit. Air units with yellow basing dots must "land" in a hex containing a friendly seaplane tender ("AV") ship unit or a friendly base unit. Air units with white basing dots must "land" in a hex containing a friendly aircraft carrier or light aircraft carrier unit, or a friendly base unit.

5a2) MOVEMENT: An air unit must be able to reach a "landing" hex using its movement factor. No searching is done during this return movement.

5a3) CAPACITY: The maximum "capacities" of ships and the base (see 2c4) must not be exceeded.

5b) LANDING PROCEDURE: To "land" an air unit, simply place it in an appropriate Operations Card "Arming" box for the hex where it "lands". *For example, an Allied air unit moved to hex "A6" could be placed in the Port Moresby base "Arming" box.*

5c) NO LANDING: Any air unit unable to "land" for any reason is eliminated. If there is a choice of air units to eliminate, that side's player makes the choice.

[6] THE TURN RECORD PHASE

Advance the Turn markers to point to the next box on *both* sides' Searchboard TIME RECORD TRACKS. If Turn 6 is over, shift Turn markers to point at Turn 1 and advance date markers to the next date. If the final Turn has been completed, count victory points (see 7a3 in the Battle Manual) to determine the game's winner.

See rule 10 in the Battle Manual for detailed examples of play.



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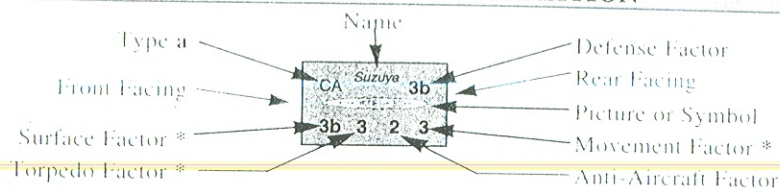
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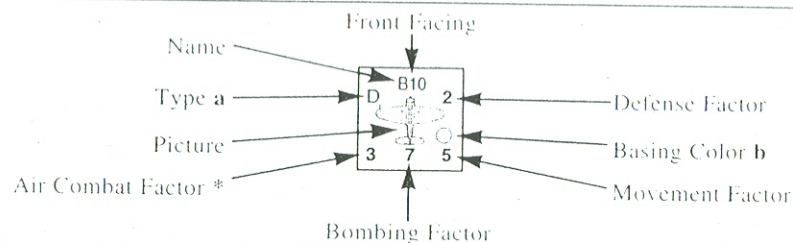
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UNIT INFORMATION REFERENCE

SHIP AND BASE UNIT INFORMATION



AIR UNIT INFORMATION



a. Ship and Base Types: AP = Transport; APD = Fast Transport (converted Destroyer); AV = Seaplane Tender; B = Base; BB = Battleship; CA = Heavy Cruiser; CL = Light Cruiser; CV = Aircraft Carrier; CVL = Light Aircraft Carrier; DD = Destroyer. Destroyer and transport type ship units represent two to six ships each; all other ship units represent one (named) ship.

Aircraft Types and Bombing Categories (4d1): D = Dive Bomber (dive bombing); F = Fighter; H = Heavy Bomber (high level bombing); M = Medium Bomber (medium level bombing); S = Scout; T = Torpedo Bomber (medium level bombing vs. base and torpedo bombing vs. ship units). All large-size air units are called "air combat units", and all small-size air units are called "scout air units".

b. Basing Colors:

Yellow: May land only on a base or AV

Green: May land only on a base

White: May land only on a base, CV, or CVL

* : This information is not used in the Basic Game.

Creating New Scout Air Units (option 15c):

Allied: Land-based (green basing color) "D" Class = Scouts QQ; Carrier-based (white basing color) "D" Class = Scouts RR-TT; Carrier-based "T" class = Scouts UU-WW; "H" Class = Scouts XX-ZZ

Japanese: Carrier-based (white basing color) "D" Class = Scouts AA-DD; Carrier-based (white basing color) "T" Class = Scouts EE-HH; Land-based (green basing color) "T" Class = Scouts SS-TT

REPLACEMENT PARTS

The **Game and Parts Price List** brochure is available listing prices of all games and components; send a stamped self-addressed envelope with current 1st-class postage. To get a complete description of our games, send \$1 and ask for our **Consumer Game Catalog** to The Avalon Hill Game Company, 4517 Harford Road, Baltimore, MD 21214. Credit Card (only) purchases may be made at 1-800-999-3222 (FAX: 410-254-0991).



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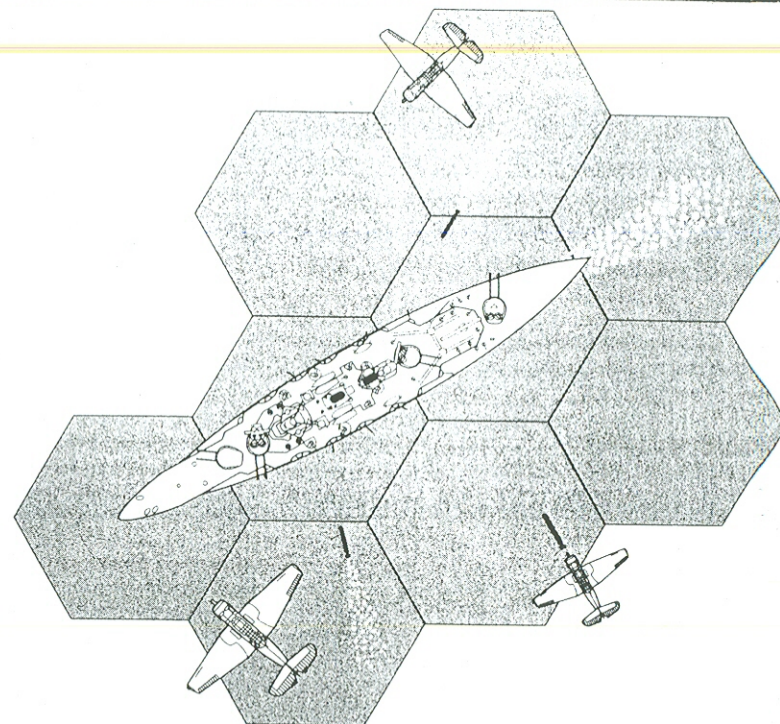
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GUADALCANAL BATTLE MANUAL



STOP!!

This manual contains information that supplements the Basic Game rules. Please read the Basic Game rules before examining this manual.

SPECIAL NOTE: If you have already played the 1992 version of our *MIDWAY* game, you are already familiar with *most* of the rules (the historical commentary is, obviously, different) in this game, and can save time learning it by reading *through* only the *GUADALCANAL* rules that are *different*. This game, in addition to referring to an "Allied" instead of "American" side, includes new unit counters, Searchboards (with a different TIME RECORD TRACK—see rule 6) and Operations Cards whose uses are unchanged, a new ship type ("APD"—see the back page of this Battle Manual), new scenarios (see 7b through 7g), and multiple bases for both sides (the rules that apply specifically to only the Americans and Midway base in the other game apply to both sides and all bases here). The ability of task force markers to move is restricted by larger land masses (see rule 3c), air units with a yellow basing color may now also "land" at bases, exit edges are modified (see option 12a4.3), option 16k3 is expanded and option 12e is brand new. Although some ship and air units in both games are unavoidably identical, the transport, destroyer and scout units are all identified differently in the two games to permit the design of additional scenarios using them together, if desired (*THE GENERAL*, Vol. 28, #5 will contain new scenarios).

GUADALCANAL®

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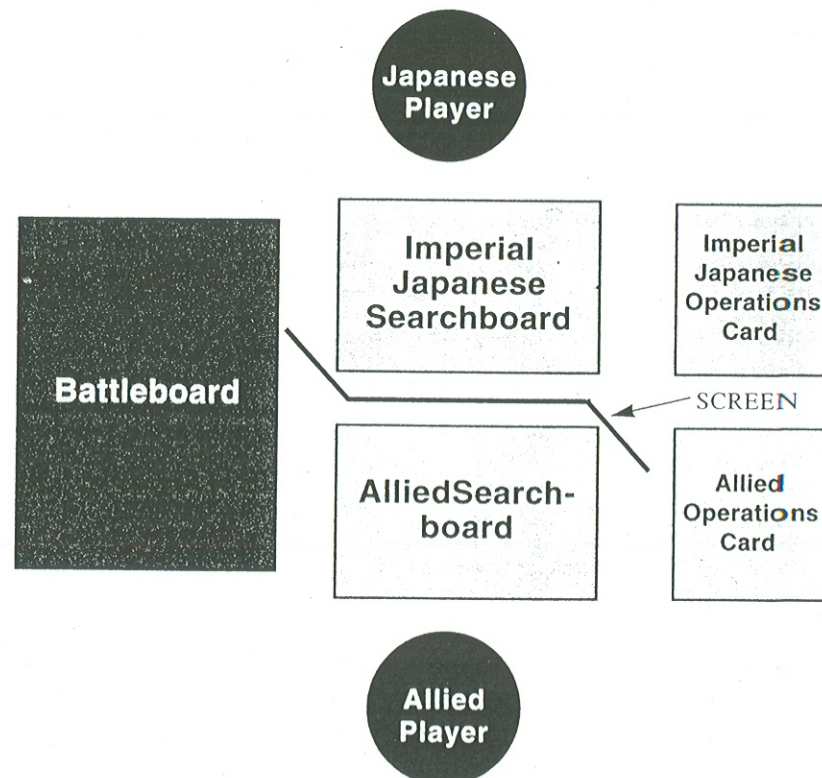
REFERENCE INFORMATION

[7] THE SCENARIOS

Each "scenario" is a separate game with its own unique rules and victory conditions. To start a game, select one of the scenarios (see 7b, 7c, 7d, 7e, 7f and 7g) as the one to be played, and use any mutually agreeable method to determine which player will play which side. Scenario 7b is recommended for beginning players, Scenarios Two (7c), Three (7d) and Four (7e) can be played using only the Basic Game rules if the "F" type air units given are *not* used. Scenarios Five (7f) and Six (7g) require the use of option 16.

7a) GENERAL SCENARIO SETUP INFORMATION: The information found here, plus the specific information found in the individual scenarios is needed to setup a game.

7a1) PLAYING SURFACES: Lay out the Searchboards on a table between the players, so that one is directly in front of each player. Place the Searchboard Screen between the two Searchboards so that each player can see only his own Searchboard. The players should place their side's Operations Card conveniently beside the Searchboard. Then, lay out the Battleboard on the other side of the Searchboards.



7a2) COUNTER PLACEMENT:

7a2.1) Time: Check the "Time" information in the individual scenario. Both sides should place Turn and Date markers on their Searchboard TIME RECORD TRACK pointing to the starting Turn. For example, when setting up Scenario One (see 7b), which starts on Turn 1 of October 27, the players' TIME RECORD TRACKS should both look as follows:

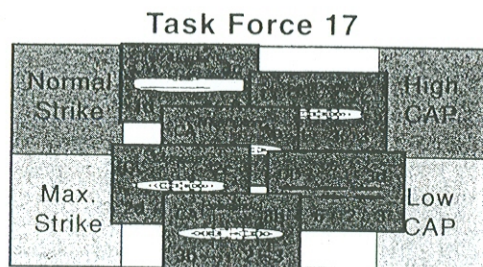
→	AUG 24	AUG 25	AUG 26	OCT 25	DATE	OCT 27
Side A TURN	1	2	3	4	5	6

7a2.2) Searchboard Setup: The task forces and the base units needed are listed in the individual scenario's "Setup Information" sections. Place a side's needed task force markers and one each of both sides' base units on their Searchboards as indicated by the individual scenario. For example, when setting up Scenario One (see 7b), the Allied player would place the Task Force 16 and Task Force 17 markers in any hex or hexes (as desired by the Allied player) on the Allied Searchboard located in the "III" area (hexes "Q7", "Q8", "R6", "R7", "S7", or "T6"), a Henderson base unit (in hex "N6"), and (to mark the enemy bases) a Buka base unit (in hex "I3"), a Rabaul base unit (in hex "F1"), and a Shortland base unit (in hex "J4") on his Searchboard.

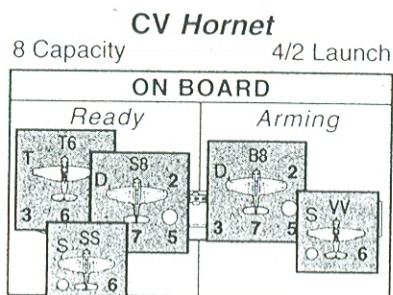
NOTE: Any unit listed in the setup information with "(back)" next to the unit is setup with the unit already flipped over so that its back side is showing. Any unit listed in the setup information with "(1 hit)" next to the unit is setup with the unit already marked with a "1 hit" marker.

7a2.3) Operations Card Setups: Most of the game's ship and air units are located on the Operations Cards in boxes that display their organization and status. Their locations are represented on the Searchboards by the task force markers.

Setting Up Ship Units: Place a side's needed ship units in the "Ships" areas of the appropriate task force boxes on their Operational Cards as indicated by the individual scenario's Setup Information sections. For example, when setting up the Introductory Scenario (see 7b) on the Allied Operations Card, ship units "Hornet", "N'hampton", "Pensacola", "Juneau", "San Diego" and destroyer unit "6" should be placed in the "Ships" area of the Task Force 17 box, as shown at right:



Setting Up Air Units: Place a side's air units in the "Ready" or "Arming" boxes of the appropriate named ship and base areas on their Operations Card as indicated by the individual scenario's Setup Information sections. For example, when setting up Scenario One (see 7b) on the Allied Operations Card, air units "B8", "S8", "T6", "SS" and "VV" should be placed in the "Ready" and/or "Arming" boxes (as desired) of the Hornet area, as shown at right:



7a3) SPECIAL RULES/DETERMINING VICTORY: Read the "Special Rules" section of a scenario's instructions carefully, as it contains rules that apply only to that individual scenario. This section will also state what is required to win the scenario, which always depends on "victory points". A scenario's special rules may include special methods to obtain victory points. Victory points are counted after the last Turn of a scenario is completed, and victory points are always awarded for eliminating or seriously damaging enemy units. The VICTORY POINTS CHART on the Searchboard Screen lists the victory points awarded for each enemy unit that is eliminated/flipped to its back side at the end of the game. For example, a line on the chart reads, "+25/+10: Per CV (Aircraft Carrier) Eliminated/Flipped." At the end of a scenario, if an aircraft carrier unit is eliminated and another is flipped to its back side, the other side would be awarded "25" victory points for the eliminated ship unit and "10" victory points for the flipped ship unit.

7a3.1) Air combat units are worth "2" victory points each, regardless of type, only if eliminated. Scout air units have no value.

7a3.2) An eliminated air combat, destroyer or transport unit that started a scenario already flipped to its back side or which has the word "ELIM" on its back side is worth only one-half the normal victory points. For example, in the Introductory Scenario (see 7b), the Japanese #13 DD unit starts the scenario already flipped to its back side. If eliminated, it is worth only "7" victory points (half the normal "14" victory points awarded for the elimination of a destroyer ship unit). This does not apply to other types of units.

7a3.3) Eliminating or flipping base units are worth no victory points. 1 hit or 2 hits markers on units are worth no victory points.

7b) SCENARIO ONE – INTRODUCTORY: This scenario has a reduced number of units and Turns. It covers only the most important forces and day of the carrier action during the Battle of Santa Cruz, is intended as an introduction to the game, and should be played using only the Basic Game Rules.

7b1) TIME: Starts with October 27, Turn 1 and ends after October 27, Turn 5 (5 Turns).

7b2) ALLIED SETUP INFORMATION:

Task Force 16: Place in any "III" area hex at the game's start.

- 1 CV - Enterprise: B10, S10, T10, Scouts RR and UU.
- 1 BB - S. Dakota.
- 1 CA - Portland.
- 1 CL - San Juan.
- 2 DD - #9, #10.

Task Force 17: Place in any "III" area hex at the game's start.

- 1 CV - Hornet: B8, S8, T6, Scouts SS and VV.
- 2 CA - N'hampton, Pensacola.
- 2 CL - Juneau, San Diego.
- 1 DD - #6.

Henderson ("N6") Base: Place the Henderson base unit in hex "N6" at the game's start.

SB141 (back), S71 (back), B6 (back), T8 (back), Scouts AA, FF, and GG.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: Buka ("I3"), Rabaul ("F1") and Shortland ("J4").

7b3) JAPANESE SETUP INFORMATION:

Strike Force: Place in any "VII" area hex at the game's start.

- 1 CV - Shokaku: 1SD, 2SD, 1ST, 2ST (back), Scouts BB and FF.
- 1 CV - Zuikaku: 1ZD, 2ZD, 1ZT, 2ZT, Scouts CC and GG.
- 1 CVL - Zuiho: ZHT, Scout HH.
- 1 AV - Chikuma: Scout OO.
- 1 AV - Tone: Scout PP.
- 2 BB - Hiei, Kirishima.
- 2 CA - Kumano, Suzuya.
- 1 CL - Nagara.
- 4 DD - #13 (back), #16, #17, #18.

Advance Force: Place in any "VII" area hex at the game's start.

- 1 CV - Junyo: JD, JT, Scouts AA and EE.
- 2 BB - Haruna, Kongo.

4 CA - Atago, Maya, Myoko, Takao.

1CL - Isuzu.

2 DD - #11, #12.

Buka ("I3"), Rabaul ("F1"), and Shortland ("J4") Bases: Place the respective base units in their hexes. The air units may be spread among them in any desired manner, except that no units may start the game at Buka base.

1HD, 2HD, HT, 1KS, Scouts II, KK, LL, and SS.

Enemy Bases: Place the enemy Henderson base unit in its hex "N6".

7b4) SPECIAL RULES:

7b4.1) The Japanese side wins with 30 or more victory points more than the Allied side has. The Allied side wins with 10 or more victory points more than the Japanese side has. Any other result is a "tie" game.

7b4.2) To play this scenario using the optional rules, especially option 14, setup fighter aircraft units as follows: 1F10, 2F10 on "Enterprise", 1F72, 2F72 on "Hornet", F121, F212, 1FG347 on Henderson Base, 1SF, 2SF on "Shokaku", 1ZF, 2ZF on "Zuikaku", 1ZHF, 2ZHF on "Zuiho", 1JF, 2JF on "Junyo", and AG3, YK, 1HF on any Japanese bases being used.

7b4.3) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "+2" (option 16k3).

This commentary briefly covers the major events of the Guadalcanal campaign and gives an account of the historical events leading to each scenario.

WHY GUADALCANAL?

Guadalcanal is one of the best known and least understood campaigns of the Second World War. The Solomon Islands, of which Guadalcanal is a part, New Guinea, the Bismarck Archipelago, and the surrounding waters saw some of the hardest-fought, longest-sustained and most critical battles of the entire Pacific War. The first real check to Japanese expansion (the Battle of the Coral Sea in May, 1942), and the first Allied offensive in the Pacific (Guadalcanal) all took place here. These operations changed the course of the Pacific War, and saw the development of the leaders, weapons and tactics that would doom the Japanese Empire.

The aircraft carrier was the latest in naval technology during World War II. Although of questionable effectiveness in its earliest development, this new weapons system had demonstrated its potential even during the First World War, and developments during the Twenties and Thirties saw the rapid evolution of seaborne airpower. By 1942, less than 39 years after the Wright brothers' flight at Kittyhawk, the aircraft carrier had eclipsed the mighty battleship and was the prime capital ship of the world's leading navies. Airpower dominated the Pacific Theater, the most extensive battlefield in the history of warfare, and the aircraft carrier represented airpower in its most mobile, flexible, and hard-hitting form. Nothing more than a floating airfield, and unable to stand up to a cruiser in a conventional gunnery action, a carrier's strength lay in its aircraft and a stealthy mobility that allowed it to strike hard and swiftly, then vanish into an endless expanse of ocean. The Japanese were the first to truly realize the full advantage of massed carrier-borne airpower, as demonstrated by their surprise attack on Pearl Harbor by planes from six large carriers to open the conflict. The Japanese then exploited their superiority, using their fast carriers as the spearhead of their early whirlwind victories. The United States Navy, with its battleships sitting in the mud at Pearl Harbor, was forced to rely on its handful of aircraft carriers, learned quickly, and—by 1942—had reached a rough parity with their Japanese counterparts in the techniques of carrier operations.

The early Japanese advances had been overwhelmingly successful, swiftly conquering a vast empire. In the area shown on the Searchboards, the Japanese had overrun, by March, 1942, all the former Australian bases in the Bismarck Archipelago, parts of northern New Guinea, and the northern Solomons. Not content, the Japanese planned further expansion. A large invasion force was to seize Port Moresby, a base within convenient bombing range of Australia, and the key to New Guinea. The threat to Port Moresby was repulsed during the indecisive Battle of the Coral Sea in early May, 1942. The disastrous defeat at Midway in June hampered Japanese plans for further expansion, handing the strategic initiative to the Allies. The Japanese continued a slow advance in the Searchboard area by entering the Eastern Solomons, an advance culminated by the start of construction of a Japanese airfield on

Guadalcanal. The Allied reaction was "Operation Watchtower" (more cynically referred to as "Operation Shoestring"), an amphibious assault to capture the new airfield.

"Operation Watchtower" was the brainchild of Admiral Ernest J. King, the overall commander of the United States Navy and Chief of Naval Operations. Wanting to exploit the victory at Midway as soon as possible, the aggressive King ordered Admiral Chester W. Nimitz, the commander of the United States Pacific Fleet to move as quickly as possible. In turn, Nimitz assigned the mission to Admiral Robert L. Ghormley, his commander in the Southwest Pacific. Ghormley had some freshly arrived Marines, a few busy construction units (to prepare for the offensive one of the first of the new naval construction battalions, or "Seabees", constructed a new airfield at Espiritu Santo in record time), miscellaneous ships (many more, including powerful carrier task forces to cover the operation, would be sent by Nimitz) and an odd assortment of land-based aircraft spread throughout his vast command. Maps were in short supply, there was insufficient time to properly load the ships, and problems of omission and commission dogged the preparations for the Allies first Pacific offensive. Despite all obstacles, U. S. Marines landed on August 7, swiftly overcame light resistance, and secured the Guadalcanal airstrip (renamed Henderson Field, after a Midway hero). Thus began one of the most protracted and bitter struggles in history.

Japanese reaction to the landings was swift, sharp, and largely ineffective. A series of air raids from Rabaul failed to cause substantial damage on the Allied ships, while their heavy losses to the covering American carrier fighter aircraft crippled Japanese land-based airpower. A Japanese cruiser force under Admiral Gunichi Mikawa, commander of the Japanese Eighth Fleet, who was in charge of all Japanese naval operations in the area, did catch the Allies napping on the night of August 8/9, but even this disastrous Allied naval defeat at the Battle of Savo Island (with the loss of one Australian and three American heavy cruisers) failed to have lasting consequences, as Mikawa did not follow up his success by attacking the nearby Allied transports and cargo ships. The Allied convoys did react by withdrawing before completing unloading, making the supply position ashore quite precarious, but it proved to be over two weeks before the Japanese were able to mount a serious full-scale counter-attack to retake the island they called "Guadarukanaru".

The Japanese reaction showed that they were not yet overly worried by the situation at Guadalcanal, but were more concerned with New Guinea. Of the three Japanese operations underway, the Guadalcanal operation was the smallest. The Japanese did not yet know the true strength of the Marines ashore, and only 1500 troops were embarked to land on Guadalcanal (Japanese estimates showed far fewer Marines on Guadalcanal than was actually the case), while two major operations were simultaneously underway in New Guinea. A powerful Japanese army column pushed overland across the rugged Owen Stanley Mountains of New Guinea. Two other amphibious forces were to land in Milne Bay to seize the new Australian fighter strip at Gili-Gili, and gain the flank of the Port Moresby position. To cover these highly diverse operations, the Japanese Combined Fleet, committed for the first time since Midway, was to sortie and destroy the American carrier forces in the area. The Allies usually-efficient intelligence system failed miserably during this operation, and the American fleet, built around three powerful carriers, was caught while the "Wasp" task force was fueling. This left only the "Enterprise" and "Saratoga" (with many bombers at Henderson Field), and consorts under Vice Admiral Frank Jack Fletcher, to face the Japanese Combined fleet under Vice Admiral Nagumo. Fletcher and Nagumo had already crossed swords before, at the Battle of Midway.



GHORMLEY



MIKAWA



FLETCHER



NAGUMO

The Allied plan was simple: cover Guadalcanal and defeat the Japanese fleet. The Japanese plan was more elaborate, seeking to draw an attack from the American carriers, then destroy them while their planes were away or in the midst of refueling and rearming. A tiny task force built around light carrier "Ryujo" steamed about sixty miles (about one hex in this game) ahead of the main Japanese forces apparently to serve as "bait" for the trap. "Ryujo", an expendable light carrier, was to be covered by a large fighter combat air patrol and "absorb" a strike from the American carriers, while the powerful "Shokaku" and "Zuikaku" launched their own air strike, surprising and destroying the American flattops.

7c) SCENARIO TWO – THE BATTLE OF THE EASTERN SOLOMONS: This scenario covers all the activities that centered on the major clash of carriers.

7c1) TIME: Starts with August 24, Turn 1 and ends after August 26, Turn 5 (17 Turns).

7c2) ALLIED SETUP INFORMATION:

Task Force 11: Place in any "II" area hex at the game's start.

- 1 CV - Saratoga: 1F5, 2F5, T8, Scouts RR and UU.
- 2 CA - Minn'polis, N. Orleans.
- 1 DD - #8.

Task Force 16: Place in any "II" area hex at the game's start.

- 1 CV - Enterprise: 1F6, 2F6, B6, S5, T3, Scouts SS and VV.
- 1 BB - N. Carolina.
- 1 CA - Portland.
- 1 CL - Atlanta.
- 1 DD - #6.

Task Force 18: Place in any "I" area hex at the game's start.

- 1 CV - Wasp: 1F71, 2F71, S71, S72, T7, Scouts TT and WW.
- 2 CA - S. Lake City, San Francisco.
- 1 CL - San Juan.
- 2 DD - #7 (back), #9.

E. Santo (back) ("T11") and Henderson (back) ("N6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner.

- 1BG11, 3BG11 (back), F223, F251 (back), B3, S3, SB232, 1FG347, Scouts AA, BB, FF, GG, HH, II, JJ, and QQ.

Gili-Gili (back) ("D7") and P. Moresby ("A6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner, except that only "F", "D", and "T" types of air units may start at the Gili-Gili base.

- 1BG3, 3BG3 (back), 1FG8, 2 FG8 (back), 1BG19, 2BG19 (back), 1BG22, 2BG22, 30A (back), 100A (back), 1FG49, 75A, 77A, Scouts CC and KK.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: Buka ("I3"), Gasmata ("D3"), Lae ("A4"), Rabaul ("F1") and Shortland (back) ("J4").

7c3) JAPANESE SETUP INFORMATION:

Strike Force: Place in any "VII" area hex at the game's start.

- 1 CV - Shokaku: 1SF, 2SF, 1SD, 2SD, 1ST, 2ST (back), Scouts AA and EE.
- 1 CV - Zuikaku: 1ZF, 2ZF, 1ZD, 2ZD, 1ZT, 2ZT, Scouts BB and FF.
- 1 AV - Chikuma: Scout OO.
- 2 BB - Hiei, Kirishima.
- 2 CA - Kumano, Suzuya.
- 1 CL - Nagara.
- 2 DD - #11, #12 (back).

Attack Force: Place in any "VII" area hex at the game's start.

- 1 CVL - Ryujo: 1RF, 2RF, RT, Scout GG.
- 1 AV - Tone: Scout PP.
- 1 DD - #16 (back).

Support Force: Place in any "VII" area hex at the game's start.

- 1 AV - Chitose: Scouts QQ and RR.
- 5 CA - Atago, Haguro, Maya, Myoko, Takao.
- 1 CL - Yura.
- 1 DD - #13.

Main Body: Place in any "VII" area hex at the game's start.

- 1 BB - Mutsu.
- 1 DD - #14 (back).

Cover Force: Place in any "VII" area hex at the game's start.

- 4 CA - Aoba, Chokai, Furutaka, Kinugasa.

Convoy Force: Place in any "VI" area hex at the game's start.

- 1 CL - Jintsu.
- 1 APD - VI.
- 2 DD - #17, #18.

Invasion Force: Place in hex "F1" (Rabaul Base) at the game's start.

- 1 AP - V (back).
- 1 DD - #15.

Advance Force: Place in hex "C6", "D6", or "E7".

- 1AP - IV (back).

Buka ("I3"), Gasmata ("D3"), Lae ("A4"), Rabaul ("F1"), and Shortland (back) ("J4") Bases: Place the respective base units in their hexes. The air units may be spread among them in any desired manner, except that no units may start the game at Buka base.

- 1AG2, 2AG2, 1AG4, 2AG4, AG6 (back), 1KS, 2KS, 1MS, 1TN, 2TN, YK, Scouts II, KK, LL, SS and TT.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: E. Santo (back) ("T11"), Gili-Gili (back) ("D7"), Henderson (back) ("N6") and P. Moresby ("A6").

7c4) SPECIAL RULES:

7c4.1) The Japanese side wins with 10 or more victory points more than the Allied side has. The Allied side wins with 25 or more victory points more than the Japanese side has. Any other result is a "tie" game.

7c4.2) Consider the anti-aircraft factor on the *Enterprise* to be only a "4" in this scenario.

7c4.3) Japanese AP and/or APD units may "unload" only in hexes "D7", "M6" or "M7" for victory points. To "unload", a unit must start and end a Turn in the hex for at least two consecutive Turns without being eliminated. No unit may be "unloaded" more than once per game. For each AP/APD unit that successfully "unloads" during the game, the Japanese side gets 10 bonus victory points at game's end.

7c4.4) If flipped over or eliminated, the victory points for the APD unit are the same as for an AP unit.

7c4.5) This rule makes a difference only if option 12a is used. The Japanese offensive caught the American carrier task forces in the midst of fueling at sea. Because of this, move all Allied ship units in Task Force 18 on the Searchboard as if none of the ship unit had a speed factor higher than "2".

7c4.6) Only Allied "F", "D", and "T" types of air units may land at the Gili-Gili base. Only Japanese air units with a yellow basing color may land at the Shortland base.

7c4.7) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "+3" (option 16k3).

The Japanese trap failed to snap completely shut. Air strikes from "Enterprise" and "Saratoga" sank the "Ryujo", but the Japanese reply, shot to pieces by a powerful American CAP and tremendous anti-aircraft fire, failed to hit the "Saratoga", and only damaged the "Big E" ("Enterprise"). A later strike from "Saratoga" damaged the seaplane tender "Chitose" before night ended the battle with a general Japanese retirement.

The Japanese land reinforcements reached Guadalcanal during the night of August 24/25, but only half the planned 1500 troops landed, and Henderson Field was ineffectively bombed. The following morning planes from Henderson's "Cactus Airforce" ("Cactus" was the Allied codename for Guadalcanal) attacked the retiring Japanese ships, sinking a destroyer, and damaging cruiser "Jintsu". Incredibly, the small Japanese infantry force attacked and was destroyed. Meanwhile, in New Guinea, the Australians repelled the Japanese who had crossed the Owen Stanley Mountains at Port Moresby, a defeat that led to a Japanese retreat all the way back to New Guinea's north coast. At Milne Bay, Australian

aircraft from Gili-Gili proceeded to sink or damage every Japanese transport and barge involved before they could complete landing operations. Ground fighting raged for over a week before the Australian troops destroyed the Japanese invaders.

All through September and October the Guadalcanal campaign dragged on, generating crisis after crisis. By night, the superior Japanese naval forces were used for the "Tokyo Express", which would run supplies and reinforcements down "The Slot", many of these convoys commanded by the redoubtable Admiral Raizo Tanaka. By day, too far from the Japanese airfields for serious interference, the "Cactus Air Force" planes from Henderson Field would dominate the surrounding waters, allowing Allied ships to dock and unload. Inland, there was some fighting almost every day, and many nights were enlivened by a Japanese naval bombardment. At sea, Japanese submarines whittled down the Allied fleet, sinking the "Wasp", and damaging both "Saratoga" and "North Carolina". Neither side could gain a clear advantage, and it was October before the next major Japanese attempt to break the deadlock.



TANAKA

The cruiser action of Cape Esperance on the night of October 11/12 saw the "Tokyo Express" badly mauled for the first time. To remedy this, the Japanese sent their battleships into action off Guadalcanal, with "Haruna" and "Kongo" blasting Henderson Field on the night of October 13/14 (known as "Battle-ship Sunday") and repeated the treatment with cruisers on the following night. Morning found the Cactus Air Force still strong enough to attack the Japanese transports, so the Japanese countered again on the night of October 14/15 by pouring another 1100 shells into Henderson. Japanese troop strength on the island continued to climb, and the Allied situation was deteriorating. On October 15, American Pacific naval commander Admiral Chester W. Nimitz gave his appreciation of the situation: "It now appears that we are unable to control the sea in the Guadalcanal area...supply of the position will only be done at great expense to us. The situation is not hope-



HALSEY

less, but it is certainly critical." Stateside, steps were already being taken to "prepare" the American and Allied publics for the loss of Guadalcanal. Every available ship and plane had already been sent to the theater, and the best Nimitz could offer was to dispatch his most aggressive subordinate, Admiral William F. "Bull" Halsey to take command.

The Japanese hoped to "soften up" the Marine and Army troops on Guadalcanal for a week prior to "Y-day" (October 22), when a final Japanese assault would finally recapture Henderson Field. The uncooperative U.S. troops refused to be "softened", and "Y-day" was subsequently postponed from day to day. Troop strengths on the island were now roughly equal, the Americans being somewhat more numerous, but the Japanese being fresher and healthier than their fatigued enemies. The Combined Fleet had again sortied under Admiral Nagumo, and was nervously loitering near Ontong Java Atoll, waiting for word that Henderson Field had been captured. Determined to do something, Halsey, recently reinforced by the repaired veteran "Big E" and the new battleship "South Dakota" (both bristling with new 40mm anti-aircraft guns), directed Admiral Thomas C. Kinkaid to sortie. The bold decision was made not to send the American carriers to their normal patrol positions in support of Henderson Field, but to sweep far to the east, passing the Santa Cruz Islands and onto the flank of the Combined Fleet. At 0126 hours on October 25, the Japanese ground forces radioed (very mistakenly) that Henderson Field had fallen. Supremely confident, Admiral Kondo set the Combined Fleet in motion, confident that he could brush aside any Allied naval forces that might be encountered (the Japanese knew that "Wasp" was sunk, and that "Enterprise" and "Saratoga" were damaged, but not that "Enterprise" was back), while Halsey was sending Kinkaid the order to "Attack - Repeat - Attack". The stage was set for the last great carrier-to-carrier battle of 1942, and the last action of that sort until the Battle of the Philippine Sea in June of 1944.



KINKAID

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7d) SCENARIO THREE - THE BATTLE OF SANTA CRUZ: October 25 - 27, 1942

7d1) TIME: Starts with October 25, Turn 1 and ends after October 27, Turn 5 (17 Turns).

7d2) ALLIED SETUP INFORMATION:

Task Force 16: Place in any "III" area hex at the game's start.

- 1 CV - Enterprise: 1F10, 2F10, B10, S10, T10, Scouts RR and UU.
- 1 BB - S. Dakota.
- 1 CA - Portland.
- 1 CL - San Juan.
- 2 DD - #9, #10.

Task Force 17: Place in any "III" area hex at the game's start.

- 1 CV - Hornet: 1F72, 2F72, B8, S8, T6, Scouts SS and VV.
- 2 CA - N'hampton, Pensacola.
- 2 CL - Juneau, San Diego.
- 1 DD - #6.

Task Force 64: Place in any "IV" area hex at the game's start.

- 1 BB - Washington.
- 1 CA - S. Francisco.
- 2 CL - Atlanta, Helena.
- 1 DD - #7.

E. Santo ("T11") and Henderson ("N6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner.

- BG5 (back), 1BG11, 3BG11 (back), F121, F212, F251 (back), SB141 (back), 1FG347, 1S71 (back), 1B6 (back), T8 (back), Scouts AA, BB, CC, FF, GG, HH, II, JJ, KK, LL, MM, OO, and QQ.

Gili-Gili ("D7") and P. Moresby ("A6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner.

- 1BG3, 3BG3, BG38, 1FG8, 1BG19, 2BG19, 1BG22, 2BG22, 3BG22, 30A, 100A, 1FG35, 2FG35, 1FG49, 2FG49, 75A, 77A, Scouts DD, EE, NN, and PP.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: Buka ("I3"), Gasmata ("D3"), Lae ("A4"), Rabaul ("F1") and Shortland ("J4").

7d3) JAPANESE SETUP INFORMATION:

Strike Force: Place in any "VII" area hex at the game's start.

- 1 CV - Shokaku: 1SF, 2SF, 1SD, 2SD, 1ST, 2ST (back), Scouts BB and FF.
- 1 CV - Zuikaku: 1ZF, 2ZF, 1ZD, 2ZD, 1ZT, 2ZT, Scouts CC and GG.
- 1 CVL - Zuiho: 1ZHF, 2ZHF, ZHT.
- 1 AV - Chikuma: Scout SS.
- 1 AV - Tone: Scout TT.
- 2 BB - Hiei, Kirishima.
- 2 CA - Kumano, Suzuya.
- 1 CL - Nagara.
- 4 DD - #13 (back), #16, #17, #18.

Support Force: Place in hex "L5" or "M6" at the game's start.

- 1 CA - Chokai.
- 1 CL - Yura.
- 2 DD - #19, #20.

Advance Force: Place in any "VII" area hex at the game's start.

- 1 CV - Junyo: 1JF, 2JF, JD, JT, Scouts AA and EE.
- 2 BB - Haruna, Kongo.
- 4 CA - Atago, Maya, Myoko, Takao.
- 1CL - Isuzu.
- 2 DD - #11, #12.

Buka ("I3"), Gasmata ("D3"), Lae ("A4"), Rabaul ("F1"), and Shortland ("J4") Bases: Place the respective base units in their hexes. The air units may be spread among them in any desired manner, except that no units may start the game at Buka base.

- 1AG2 (back), 2AG2, AG3, 1AG4, AG6, AG253 (back), YK, 1HF, 1HD, 2HD, HT, 1KS, 2KS, 1KY, 2KY, IMS, 2MS, 1TN, Scouts DD, HH, II, KK, LL, MM, NN, SS and TT.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: E. Santo ("T11"), Gili-Gili ("D7"), Henderson ("N6") and P. Moresby ("A6").

7d4) Special Rules:

7d4.1) The Japanese side wins with 25 or more victory points more than the Allied side has. The Allied side wins with 10 or more victory points more than the Japanese side has. Any other result is a "tie" game.

7d4.2) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "+2" (option 16k3).

Santa Cruz proved to be a very confusing battle. The action opened when "Enterprise" dive bombers found the light carrier "Zuiho" and knocked her out of the battle. Both sides had now spotted each other, and large air strikes followed. The "Big E" was able to disappear into a rain squall so that the Japanese air strike hit the "Lucky Hornet" (up until then that ship had never been hit) with full fury, inflicting heavy damage, but suffering severe losses (25 of 27 aircraft). The American strike was less costly, but also less successful. Hits were scored on big flattop "Shokaku" and seaplane tender "Chikuma", but neither ship was sunk. Later Japanese strikes hit "Hornet" again, and also slightly damaged "South Dakota" (which was throwing up a fantastic amount of antiaircraft fire, claiming 26 Japanese planes shot down by the end of the day), "San Juan", and (again) "Enterprise".

Forced to retire, the Americans attempted to scuttle the doomed "Hornet", but the big flattop was still burning as Japanese surface units arrived to deliver the final torpedoes that sent the ship to the bottom. The American fleet had been defeated, but the Japanese had lost about 100 carrier planes and virtually the last irreplaceable survivors of their excellent pre-war air crews. The battle proved to be indecisive, as the Japanese, battered and low on fuel, had no way to exploit their victory. Meanwhile, to the surprise of almost everyone, except maybe themselves, the American Soldiers and Marines on Guadalcanal totally defeated all Japanese ground attacks, and the constant bone of contention, Henderson Field, remained securely in Allied hands. The Cactus Air Force still dominated the local waters in daylight, and even managed to sink light cruiser "Yura" on October 25.

The Santa Cruz battle settled nothing, and both sides again had to make frenzied preparations for further operations. Faced with a deteriorating situation in New Guinea, where Allied troops approached the north coast and Allied planes tied down many of Rabaul's aircraft, the Japanese still continued the Tokyo Express runs down "The Slot", and, by November 12, had partially reinforced their troops on what was becoming known as "Starvation Island". One last supreme effort with a large convoy might still save the day for the Rising Sun. Carrier strength for both sides had reached a nadir for the war to date. The Japanese had only two understrength carrier air groups. The Allies, with "Saratoga" under repair, had only the partially repaired "Enterprise" available, with a jammed elevator. However, due to the weakness of the available airpower, both sides were, for the first time, prepared to commit major surface forces for surface naval actions.

7e) SCENARIO FOUR - THE BATTLE OF GUADALCANAL: November 12 - 15, 1942.

7e1) TIME: Starts with November 12. Turn 2 and ends after November 15. Turn 3 (20 Turns).

7e2) ALLIED SETUP INFORMATION:

Task Force 16: Enters at any "V" area hex on Turn 7.

- 1 CV - Enterprise: 1F10, 2F10, B10, S10, T10, Scouts RR and UU.
- 1 CA - N'hampton.
- 1 CL - San Diego.
- 1 DD - #6.

Task Force 64: Enters at any "V" area hex on Turn 7.

- 2 BB - S. Dakota, Washington.
- 1 DD - #9.

Task Force 67: Place in hex "N6" (Henderson Base) at the game's start.

- 3 CA - Pensacola, Portland, S. Francisco.
- 3 CL - Atlanta, Helena, Juneau.
- 1 AP - I.
- 3 DD - #7 (back), #8, #10.

E. Santo ("T11") and Henderson ("N6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner.

- BG5, 1BG11, 3BG11, BG42, F112, F121 (back), F212 (back), F251, SB131, SB132, SB141, SB142, 1FG347, T8 (back), Scouts AA, BB, FF, GG, HH, II, JJ, KK, LL, OO, and QQ.

Gili-Gili ("D7") and P. Moresby ("A6") Bases: Place the respective base units in their hexes. The air units may be spread between them in any desired manner.

- 1BG3, 2BG3, 3BG3, BG38, 1FG8, 1BG19, 1BG22, 2BG22, 3BG22, 30A, 100A, 1FG35, BG43, 1FG49, 75A, 76A, 77A, 2FG347, Scouts CC, DD, MM, and PP.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: **Buka ("I3")**, **Gasmata ("D3")**, **Lae ("A4")**, **Rabaul ("F1")** and **Shortland ("J4")**.

7e3) JAPANESE SETUP INFORMATION:

Strike Force: Place in any "VI" area hex at the game's start.

- 1 CV - Hiyo: 1HF, 2HF, 1HD, HT (back), Scouts AA and EE (see 7e4.5).
- 1 CV - Junyo: 1JF, 2JF, JD, JT, Scouts BB and FF.
- 1 AV - Tone: Scouts OO, PP.
- 2 BB - Haruna, Kongo.
- 1 DD - #20 (back).

Advance Force: Place in any "VI" area hex at the game's start.

- 2 BB - Hiei, Kirishima.
- 2 CA - Atago, Takao.
- 1 CL - Nagara.
- 3 DD - #11, #15, #16.

Support Force: Place in hex "J4" (Shortland Base) at the game's start.

- 2 CA - Chokai, Kinugasa.
- 1 CL - Isuzu.
- 1 DD - #17 (back).

Attack Force: Place in hex "J4" (Shortland Base) at the game's start.

- 2 CA - Maya, Suzuya.
- 2 DD - #12, #14 (back).

Convoy Force: Place in hex "J4" (Shortland Base) at the game's start.

- 1 CL - Sendai.
- 2 AP - IV, V.
- 3 DD - #13, #18, #19.

Buka ("I3"), Gasmata ("D3"), Lae ("A4"), Rabaul ("F1"), and Shortland ("J4") Bases: Place the respective base units in their hexes. The air units may be spread among them in any desired manner.

- 1AG2, 2AG2, AG6, YK, AG252, AG253, AG956, 1KS, 2KS, 3KS, 1KY, 1MS, 1ST, Scouts II, JJ, KK, LL, MM, NN, SS, and TT.

Enemy Bases: Place the respective enemy base units in their hexes, as follows: **E. Santo ("T11")**, **Gili-Gili ("D7")**, **Henderson ("N6")** and **P. Moresby ("A6")**.

7e4) Special Rules:

7e4.1) The Japanese side wins with 15 or more victory points more than the Allied side has. The Allied side wins with 35 or more victory points more than the Japanese side has. Any other result is a "tie" game.

7e4.2) Japanese AP units may "unload" only in hexes "M6" or "M7" for victory points. Allied AP units may "unload" only in hex "N6" for victory points. To "unload", a unit must start and end a Turn in the hex for at least two consecutive Turns without being eliminated. No unit may be "unloaded" more than once per game. For each AP unit that successfully "unloads" during the game, its side gets 10 bonus victory points at game's end.

7e4.3) Consider the launch factor on the Enterprise to be a "3/2" in this scenario.

7e4.4) If option 11d is used, the Guadalcanal base unit may "repair" twice as much damage as normal if it remains unengaged for two consecutive night Turns.

7e4.5) Engine problems dictated use of "Hiyo" only in an emergency, so use is optional with the Japanese side. Before play starts, the Japanese side should secretly note if the "Hiyo" ship unit and her air group will be used—reveal at game's end for verification. If the "Hiyo" is used, the Allied side is awarded 5 bonus victory points at the end of the game. If not used, keep the ship unit out of the game, but the air units shown aboard the "Hiyo" may start on any Japanese base(s).

7e4.6) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "+1" (option 16k3).

The morning of November 12 found Allied transports unloading troops and supplies at Henderson Field. Unloading was completed by the afternoon, despite Japanese air attacks.

and the Allied transports withdrew while most of their escorts remained behind to face any enemy naval forces. That night, the Japanese sent Admiral Hiroaki Abe and a powerful task force including battleships "Hiei" and "Kirishima" to bombard the American positions on Guadalcanal. They were met off Guadalcanal in a confused melee by an American surface force under Admirals Daniel J. Callaghan and Norman Scott.

7f) SCENARIO FIVE - THE BATTLE OF FRIDAY THE THIRTEENTH:

This is not an overall scenario as were scenarios One through Four. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Searchboards are not needed to setup this scenario, only the Battleboard, the two Surface Turn markers, and the ship units given below:

7f1) TIME: Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a night Turn.

7f2) ALLIED SETUP INFORMATION: Assume the Japanese are side B this Turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.

2 CA - Portland, S. Francisco.

3 CL - Atlanta, Helena, Juneau.

2 DD - #9, #10.

7f3) JAPANESE SETUP INFORMATION: Assume the Japanese are side B this Turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.

2 BB - Hiei, Kirishima.

1 CL - Nagara.

3 DD - #11, #12 (back), #15.

7f4) SPECIAL RULES:

7f4.1) The Japanese side wins with 5 or more victory points more than the Allied side has. The Allied side wins with more victory points than the Japanese side has. Any other result is a "tie" game.

7f4.2) Assume that the opposing task force units entered the battle hex through opposite hex-sides, so the ship units setup facing in opposite directions (see option 16b2.2).

7f4.3) Attempts to break contact may not begin before the end of Surface Turn 5.

7f4.4) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "+1" (option 16k3).

Sailing between the Japanese ships, the American ships got so close it was hard to miss with guns, and the maneuver also gained a measure of protection from Japanese captains reluctant to fire torpedoes into the confused melee. Losses were heavy on both sides. The Americans lost "Atlanta", "Juneau" (crippled, then sunk the following day by a Japanese submarine) and four destroyers, all added to the doleful collection of sunken ships found in what was by now known as "Ironbottom Sound". "San Francisco", "Portland", and a destroyer were heavily damaged. Both American admirals were killed in the action. The surprised Japanese postponed their bombardment, and lost two destroyers, plus the fast battleship "Hiei", hit by over eighty 8-inch shells and too heavily damaged to escape, was sunk by planes from Henderson Field and "Enterprise" during the following day. The "Big E", leaving part of her air group at Henderson Field, retired southward for safety during the night.

A Japanese cruiser force ineffectively bombarded Henderson Field during the night of November 13/14, but was slow to clear the island and was still in range of the Cactus Air Force when the sun came up. The morning of November 14 saw repeated air strikes from Henderson Field and the "Enterprise" on the retiring ships. "Kinugasa" was sunk, and "Isuzu", "Chokai", "Maya" and a destroyer were damaged. During the afternoon, a large convoy of Japanese transports moving down "The Slot" also came under heavy and repeated attacks. Fighter cover from the inexperienced Japanese carrier pilots proved ineffective, and their land-based air forces were too tied down with heavy fighting in New Guinea to be of much help. By nightfall, seven Japanese transports were sunk or burning in the shallows.



LEE

That night yet another Japanese bombardment force, this time commanded by Admiral Nobutake Kondo and including battleship "Kirishima", moved towards Guadalcanal. This had been done so often in the past that it seemed almost routine. However, this time the Allies were waiting with the powerful new battlewagons "Washington" and "South Dakota", as well as an escort of four destroyers under Admiral Willis A. "Ching" Lee, Jr.

7g) SCENARIO SIX - BATTLESHIP ACTION:

This is not an overall scenario as were scenarios One through Four. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Searchboards are not needed to setup this scenario, only the Battleboard, the two Surface Turn markers, and the ship units given below:

7g1) TIME: Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a night Turn.

7g2) ALLIED SETUP INFORMATION: Assume the Japanese are side B this Turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.

2 BB - S. Dakota (1 hit), Washington.

1 DD - #9.

7g3) JAPANESE SETUP INFORMATION: Assume the Japanese are side B this Turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.

1 BB - Kirishima.

2 CA - Atago, Takao.

2 CL - Nagara, Sendai.

2 DD - #11, #12 (back).

7g4) SPECIAL RULES:

7g4.1) The Japanese side wins with 5 or more victory points more than the Allied side has. The Allied side wins with 15 or more victory points more than the Japanese side has. Any other result is a "tie" game.

7g4.2) Assume that the opposing task force units entered the battle hex through adjacent hex-sides, so the ship units setup facing in the same direction (see option 16b2.2).

7g4.3) Attempts to break contact may not begin before the end of Surface Turn 4.

7g4.4) The Allied side holds the free roll marker (option 11a) at the game's start. The night fighting modifier to the Japanese side's roll is "-1" (option 16k3).

Another confused night melee followed, with the U.S. losing three destroyers sunk and "South Dakota" damaged, but the Japanese lost a destroyer and battleship "Kirishima" sunk, and, once again, there was no bombardment of Henderson Field. Morning found the surviving Japanese transports still unloading off Guadalcanal, and all four were promptly sunk. Thus, the hard-fought November battles were a disaster for the Japanese. Their intended buildup of ground troops on the island failed. The American ground forces were on the offensive, and continued their attacks for the rest of the campaign. The Japanese carrier air groups were temporarily lowered in strength and permanently lowered in quality. Although the bedraggled Japanese troops held on in Guadalcanal until February, 1943, the November effort proved to be the last Japanese attempt to retake the island. Facing the Allies on two fronts from Rabaul had proved to be too much for Japan.

[8] BACKGROUND ON THE BATTLES AROUND GUADALCANAL

8a) TRAINING AND LEADERSHIP:

By August of 1942, the different Allied and Japanese policies for crewing their aircraft, reflecting national differences in philosophy and capabilities, were starting to have a profound effect. The Japanese airmen, mostly from a rigorously-trained pre-war elite that was heavily seasoned by repeated combat missions, had formed the finest group of carrier aircrews of the war. They were also irreplaceable, and their experience and skill died with many of them in the early battles of the war, especially at the disastrous Battle of Midway. At the start of the operations around Guadalcanal, Japanese aircrew quality was already on a downhill slide, and by the end of the Guadalcanal campaign, the superb pool of pre-war fliers was all but gone.

The American pre-war pilots and battle-tested reservists, on the other hand, held key posts and provided leadership for their air units, but the bulk of them were working at home training

a new generation of aviators and passing on their hard-earned experience. The bulk of the American aircrews by the second half of 1942 were recent civilians, not as experienced as their older, veteran, Japanese counterparts, but superior to the rookie Japanese pilots arriving at the front, and getting better aircraft and devising more effective tactics as time passed. New Zealand and Australia had used the first half of 1942 to recall many of their veteran flyers from other theaters. The Japanese quantitative and qualitative superiority in the air that had yielded the amazing victories of early 1942 had eroded to a rough equality by the second half of the year.

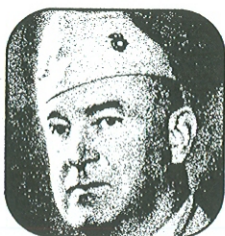
The Japanese naval commanders, from their leader Admiral Yamamoto on down, were well-trained professionals. On the whole, they were a rather conservative group, and fond of devising intricate plans featuring precise timetables and numerous converging forces. They had been pioneers in the use of the aircraft carrier, and, especially at night, they could prove to be very dangerous in surface actions. The Allied naval commanders, in particular the American ones, were left after the Pearl Harbor disaster with no other alternative, and swiftly and successfully adopted the doctrine of aircraft carrier supremacy in sea warfare. Admiral Nimitz gave carrier tactics his full backing, and his subordinates followed suit. The problem that would arise around Guadalcanal was that, in 1942, not only were there too few Allied aircraft carriers (along with everything else), but aircraft could not do everything at all times.

8b) TASK FORCES:

Warships in a combat zone were invariably organized into "task forces" consisting of various numbers and classes of ships grouped to render mutual support and calculated to be strong enough to accomplish their mission. As can be seen from the game, the Allied command assigned numbers to their task forces while the Japanese command designated their task forces with an often bewildering array of names that defined their missions and detailed their roles in a plan (many of these names have been shortened or somewhat modified to fit on the game's task force markers). A fleet might be divided by circumstances or by design into various task forces reflecting the ship's different ports of origin, different sailing speeds or different missions.

The various ships in a task force were intended to use their varying capabilities to provide mutual support. If under air attack, the smaller ships would be assembled around the largest, most important ships (an aircraft carrier or carriers in a carrier task force, battleships or cruisers in a surface task force, troop transports in an escorted convoy, etc.) to provide the maximum anti-aircraft protection to the most valuable ship or ships. If threatened by an enemy surface force or to bombard enemy land positions, the powerful guns of the battleships and cruisers came into their own, while more vulnerable ships retired out of gun range or would be detached into a separate task force kept at a safe distance. Destroyers could add to an anti-aircraft barrage, support gunnery ships and provide anti-submarine protection to an entire task force. In the Japanese Navy, it was not unusual to attach a light carrier or seaplane tender to an important task force to provide scouts and air cover.

8c) THE GUADALCANAL PERIMETER:



VANDEGRIFT

*When he gets to Heaven,
To Saint Peter he will tell,
"Another Marine reporting, sir,
I've served my time in hell."
— Anon.*



Some think of the Guadalcanal campaign as primarily a land campaign thanks to numerous newsreel and movie images of Marines slogging through the jungles. This game views the campaign as primarily a naval and air campaign, not because the land portion was unimportant, but because the land portions of the campaign provide few opportunities for player decisions to change history.

From August through November, 1942, the American Marine (and later, Army) troops on Guadalcanal held what came to be viewed as the most valuable piece of real estate in the

Pacific. Despite every effort by the Japanese Army, their attacks never seriously threatened the American toehold. Weakened by tropical diseases (especially malaria), kept awake by the nuisance nighttime bombings of "Washing-Machine Charlie" and "Louie the Louse", and blasted by every high explosive in the Japanese air and naval inventory, including battleship shells, the defenders still handily defeated successive waves of fresh but outnumbered, poorly-supported, and unimaginatively-led enemy troops. Each successive Japanese force proved too small to accomplish the mission, and, failing, the survivors were overtaken by the same problems bedeviling the defenders, only worse, because the Japanese medical system was more primitive and serious malnutrition was added to their list of difficulties. After October, when all land attacks failed disastrously, the Japanese "postponed" serious efforts to overrun the perimeter, but still made one last air and sea effort to recover the island in November.

The initial August 7 landing was by the United States First Marine Division ("The Old Breed"), with its Seventh Marine Regiment detached elsewhere and replaced for the invasion by the Second Marine Regiment of the Second Marine Division. This force was under Marine Major General Alexander A. Vandegrift. Although sporadically cut off by the Japanese control of the surrounding seas at night, and suffering shortages of all sorts at one time or another, the American ground forces maintained, tenuously, a viable sea-borne supply line to the rear. Later reinforcements would add the missing subordinate units until, by the end of the period covered by the game, two complete Marine divisions (the First and Second) were present (both have the word "Guadalcanal" on their divisional patches), plus the United States Army's "Americal" and 25th divisions. American divisions in World War Two contained three infantry (or "rifle" regiments) of around 3,000 men each, plus an artillery regiment and a wide assortment of attached units. Marine divisions, with more attached units, were larger than Army divisions. After landing, the troops seized what was quickly named "Henderson Field" and established a defensive perimeter around the airstrip. The first Allied aircraft arrived on August 20. The Japanese on Guadalcanal were initially very weak, consisting mainly of the airfield construction workers. These forces fled into the jungle when the Marines first landed.

Henderson's "Cactus Airforce" and support from carriers in the area made daylight naval operations by the Japanese very risky. Drastically underestimating the size and prowess of the Americans on Guadalcanal, the initial Japanese response was to send a small force of around 1500 men under Colonel Kiyono Ichiki to retake the airfield (Ichiki's force had originally been earmarked as part of the Midway invasion force before that landing had been cancelled by naval defeat in June). Slipped in with about half his men on an early night run of the "Tokyo Express", Ichiki was discovered by Marine patrols, and decided to attack immediately, without waiting for the rest of his force. Ichiki's frontal attacks from the east on August 20 and 21 (with only 790 men) were not only easily repulsed, but a flanking counterattack surrounded and annihilated most of the Japanese survivors. A few Japanese broke out of the trap, but Ichiki burned the unit's colors and committed hara-kiri. Next, on the nights of September 12/13 and 13/14, 5,600 men of Major General Kiyotake Kawaguchi's newly-arrived 35th Brigade attacked from the southwest. Their attacks fell on a low ridge, thereafter known as "Bloody Ridge" or "Edson's Ridge", defended by a small composite Parachute/Raider battalion commanded by Marine Colonel Merritt A. Edson. Edson repulsed the attacks (for which he was awarded the Medal of Honor), and the Japanese lost another 1,200 men.

Undaunted, the Japanese shipped in another 20,000 soldiers during September and October. Lieutenant General Harukichi Hyakutake, the Seventeenth Army commander, took personal charge on the island, and, as part of the Battle of Santa Cruz, attacked from the southeast with his Second "Sendai" Division ("The Butchers of Nanking") on the nights of October 23/24 and 24/25. Poorly coordinated, the attacks ran squarely into, among others, legendary Marine "Chesty" Puller. Repulsed yet again, the Japanese lost another 3,500 dead. This time, Vandegrift had been reinforced and was able to react by going on the offensive on November 4, further expanding the defensive perimeter.

With their loss of control of the surrounding waters in the sea and air battles of mid November, the Japanese command was reluctantly forced to consider and carry out a retreat. The Japanese abandoned Guadalcanal (organized resistance ended on February 9, 1943 after 13,000 Japanese troops were surreptitiously evacuated by barges, submarines and a "reverse" Tokyo Express) because they lost control of both the air and sea around the island, and were unable to properly supply and reinforce the disease-ridden troops already present. If, instead, the Allies had lost control of sea and sky, the skill, determination and courage of the ground defenders would have helped them no more than these same admirable qualities had helped the doomed defenders of Bataan and Corregidor earlier in 1942.

8d) THE WARSHIPS:

All Pacific Ocean naval powers built somewhat similar warships that were designed to operate over the vast distances of the world's largest ocean, but their doctrines, traditions and training could be very different. The Japanese and United States navies followed very different training programs with their ships. The Japanese practiced torpedo attacks and night actions. The Allies emphasized gunnery and daylight actions. The Australian and New Zealand navies (which do not appear in any of this game's scenarios) were better drilled for night actions than the U. S. N., but still much inferior to the Japanese.

8d1) GENERAL WARSHIP DISCUSSION: Both sides used similar ship classifications.

Aircraft Carriers (AV, CV, and CVL): The Japanese and American carriers (CV) and (for the Japanese) light carriers (CVL) were all large floating airfields, loaded with flammables and explosives, and vulnerable to any hit. The American ship-board plane handling and damage control techniques were superior to those on the Japanese ships. The Japanese use of floatplanes for search purposes to save the carrier planes for strikes was sound in theory, but broke down due to the lack of sufficient numbers of modern ("Jake") floatplanes. The older biplane floatplanes lacked the range to be very useful. For the game, most Japanese floatplanes (i.e., those carried on battleships and heavy cruisers, etc.) are ignored, as only the "Jake" floatplanes carried by the seaplane tenders (AV) were likely to do much long-range scouting. Allied floatplanes were not used in this manner, but were generally used for gunnery spotting and close-in anti-submarine patrols, so they are also ignored in the game.

Battleships (BB): The Japanese and American battleships were basically similar: large, heavily-armored ships with huge guns. The Japanese *Kongo* class were extensively modernized World War I battlecruisers of British design that could use their speed to accompany the fast carriers, but whose armor—thin to keep weight down and speed up—left something to be desired when faced by an enemy battleship. The *Mutsu* represented the older, World War I era tradition of the battleship as slow, but very heavily armed and armored. The powerful new classes of American fast battleships (the *North Carolina*, *South Dakota*, and *Iowa* classes) were just becoming available to the Pacific Fleet in the summer of 1942, and combined power and protection with (thanks to very powerful engines) speed.

Heavy and Light Cruisers (CA and CL): United States cruisers were intended as pure gunnery ships, designed (and their crews trained) for daylight surface actions. An exception was the *Atlanta* class, armed with twelve to sixteen dual-purpose five-inch guns and intended to provide powerful anti-aircraft protection. Although some American light cruiser (CL) classes carried torpedoes, the unreliability of the Allied torpedo made the risk of moving close enough to use them unprofitable. Japanese light and heavy cruisers carried their excellent "long lance" torpedoes, in addition to their main guns. The Japanese heavy cruisers (CA) were larger and more powerfully-armed than the same Allied classes, which had been built to conform to the 10,000 ton limits of pre-war naval treaties (the Japanese had cheated and exceeded the limitations), although in both navies they carried eight-inch guns. Australian cruisers carried torpedoes, but they were also short-ranged, so they depended on their gunnery as much as the U. S. N. Newer American light cruisers (CL) like the "Helena" were armed with awesome batteries of twelve to fifteen six-inch guns, and were equal or superior in tonnage to the Allied heavy cruisers.

Destroyers: Allied destroyers were essentially their only torpedo-carrying surface ships, and were roughly equal to their Japanese counterparts, although the Japanese destroyers carried the much superior "long lance" torpedo, whereas the Allied destroyers carried better anti-submarine equipment. Destroyers generally operated in "squadrons" or "flotillas", and each destroyer unit in the game represents four to six individual destroyers.

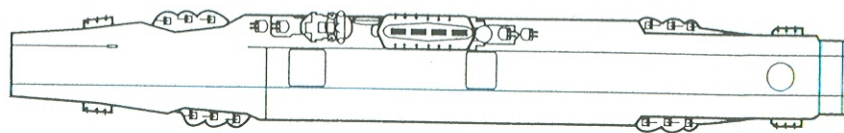
8d2) SPECIFIC SHIP DATA: This section provides some brief data and histories of the ships found in the *GUADALCANAL* game.

UNITED STATES NAVY

Although Australian and New Zealand warships participated in the campaign, none appear in this game's scenarios, so all ships covered below are from the United States Navy.

Note: United States Navy vessels are assigned hull numbers based on their type and their chronology within that type. For example, the "Enterprise" is "CV.6". "CV" is the code that indicates that the ship was an aircraft carrier, and "6" indicates that she was the sixth aircraft carrier; the "Atlanta", CL.51, was the fifty-first light cruiser built for the Navy, etc.

AIRCRAFT CARRIERS (CV): United States aircraft carriers were named after famous and historic earlier ships ("Enterprise" and "Hornet") or battles ("Saratoga").



U. S. S. ENTERPRISE: CV.6

Yorktown class, 19,900 tons, 100 aircraft capacity, launched 10/3/36. "The Big E".

Service Highlights: Tokyo raid, 4/42; Battle of Midway, 6/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42 (damaged—many additional anti-aircraft guns added during repairs, accounting for the ship unit's anti-aircraft factor); Battle of Santa Cruz, 10/42 (damaged); Battle of Guadalcanal, 11/42; Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44; and Battle of Okinawa (severe kamikaze damage, 4/11/45 and 4/13/45). Scrapped in 1958.

U. S. S. HORNET: CV.8

Yorktown class, 20,000 tons, 100 aircraft capacity, launched 12/14/40. "The Lucky Hornet".

Service Highlights: Tokyo raid, 4/42; Battle of Midway, 6/42; and Battle of Santa Cruz (sunk by attacks from Japanese carrier aircraft, 10/27/42). The name was transferred to Essex class CV.12.

U. S. S. SARATOGA: CV.3

Saratoga class, 39,000 tons (often listed as 33,000 tons, a fiction allowed by the Washington Naval Treaty), 100 aircraft capacity, launched 4/7/25. "Sara". Originally laid down as a battlecruiser.

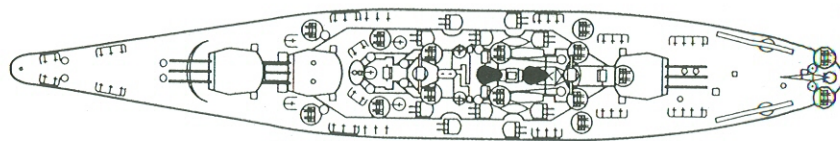
Service Highlights: Attempted relief of Wake Island, 12/41; torpedoed by a submarine, 1/11/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; again torpedoed by a submarine, 8/31/42; with the British Eastern Fleet, Spring/44; and hit by kamikazes off Iwo Jima, 2/21/45. Sunk at Bikini atom bomb tests in 1946.

U. S. S. WASP: CV.7

Wasp class, 14,700 tons, 84 aircraft capacity, launched 4/4/39.

Service Highlights: Relief of Malta, 4/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; and torpedoed and sunk by a submarine, 9/15/42. The name was transferred to Essex class CV.18.

BATTLESHIPS (BB): United States battleships were named after states.



U.S.S. NORTH CAROLINA: BB.55.

North Carolina class, 35,000 tons, 9 x 16" and 20 x 5" guns, launched 6/13/40. "The Showboat". Abbreviated as "N. Carolina" on its ship unit.

Service Highlights: Guadalcanal landings and Battle of the Eastern Solomons, 8/42; torpedoed by a submarine on 9/15/42; and Battle of the Philippine Sea, 6/44. Now on permanent display in Wilmington, N. C.

U.S.S. SOUTH DAKOTA: BB.57

South Dakota class, 35,000 tons, 9 x 16" and 20 x 5" guns, launched 6/7/41. Abbreviated as "S. Dakota" on its ship unit.

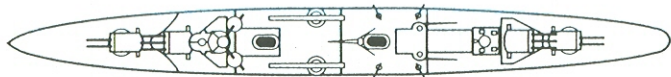
Service Highlights: Battle of Santa Cruz, 10/42 (damaged—credited with shooting down 26 Japanese aircraft); Battle of Guadalcanal, 11/42 (damaged); Battle of the Philippine Sea, 6/44 (damaged); and Battle of Leyte Gulf, 10/44. Scrapped in 1962.

U. S. S. WASHINGTON: BB.56

North Carolina class, 35,000 tons, 9 x 16" and 20 x 5" guns, launched 6/1/40.

Service Highlights: Atlantic service with the British Home Fleet through July, 1942; Battle of Guadalcanal, 11/42 (slightly damaged—Admiral Lee's flagship—sank the Japanese battleship *Kirishima*); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf, 10/44. Scrapped in 1961.

HEAVY CRUISERS (CA): United States cruisers were named after cities.



U. S. S. MINNEAPOLIS: CA.36

Astoria class. 9,950 tons, 9 x 8" and 8 x 5" guns, launched 9/6/33. Abbreviated as "Minn'polis" on its ship unit.

Service Highlights: Raid on Rabaul, 2/42; Battle of the Coral Sea, 5/42; Battle of Midway, 6/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; Battle of Tassafaronga, 11/42 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf, 10/44. Scrapped in 1960.

U. S. S. NEW ORLEANS: CA.32

Astoria class. 9,950 tons, 9 x 8" and 8 x 5" guns, launched 4/12/33. Abbreviated as "N. Orleans" on its ship unit.

Service Highlights: Pearl Harbor, 12/41; Battle of the Coral Sea, 5/42; Battle of Midway, 6/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; Battle of Tassafaronga, 11/42 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf, 10/44. Scrapped in 1959.

U. S. S. NORTHAMPTON: CA.26

Northampton class. 9,050 tons, 9 x 8" and 8 x 5" guns, launched 9/5/29. Abbreviated as "N'hampton" on its ship unit.

Service Highlights: Battle of Midway, 6/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; and Battle of Tassafaronga (sunk 12/1/42). The name was transferred to *Baltimore* class CA.125.

U. S. S. PENSACOLA: CA.24

Pensacola class. 9,100 tons, 10 x 8" and 8 x 5" guns, launched 4/25/29.

Service Highlights: Raid on Rabaul, 2/42; Battle of Midway, 6/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; Battle of Tassafaronga, 11/42 (damaged); and Battle of Leyte Gulf, 10/44. Target in Bikini atom bomb tests in 1946; sunk in 1948.

U. S. S. PORTLAND: CA.33

Indianapolis class. 9,800 tons, 9 x 8" and 8 x 5" guns, launched 5/21/32. "Sweet P".

Service Highlights: Battle of the Coral Sea, 5/42; Battle of Midway, 6/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42 (damaged); and Battle of Leyte Gulf, 10/44. Scrapped in 1959.

U.S.S. SALT LAKE CITY: CA.25

Pensacola class. 9,100 tons, 10 x 8" and 8 x 5" guns, launched 1/23/29. "Old Swayback". "Swayback Maru". Abbreviated as "S. Lake City" on its ship unit.

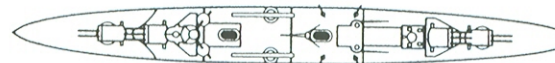
Service Highlights: Tokyo raid, 4/42; Guadalcanal landings, 8/42; Battle of Cape Esperance, 10/42 (damaged); and Battle of Komandorski Islands, 3/43 (damaged). Target in Bikini atom bomb tests in 1946; sunk in 1948.

U.S.S. SAN FRANCISCO: CA.38

Astoria class. 9,950 tons, 9 x 8" and 8 x 5" guns, launched 3/9/33. Abbreviated as "S. Francisco" on its ship unit.

Service Highlights: Pearl Harbor, 12/41; Raid on Rabaul, 2/42; Guadalcanal landings, 8/42; Battle of Cape Esperance, 10/42; slightly damaged in air attack, 11/12/42; Battle of Guadalcanal, 11/42 (damaged—this was the flagship of Admiral Callaghan, who was killed in the action and awarded a posthumous Medal of Honor); and Battle of the Philippine Sea, 6/44. Scrapped in 1961.

LIGHT CRUISERS (CL): United States cruisers were named after cities.



U. S. S. ATLANTA: CL.51

Atlanta class. 6,000 tons, 16 x 5" guns, launched 9/6/41. An anti-aircraft cruiser.

Service Highlights: Battle of Midway, 5/42; Guadalcanal landings and Battle of the Eastern Solomons, 8/42; and Battle of Guadalcanal (sunk 11/13/42—this was the flagship of Admiral Scott, who was killed in the action and awarded a posthumous Medal of Honor). The name was transferred to *Cleveland-Fargo* class CL.104.

U. S. S. HELENA: CL.50

Brooklyn class. 10,000 tons, 15 x 6" and 8 x 5" guns, launched 8/27/38.

Service Highlights: Pearl Harbor, 12/41 (damaged); Battle of Cape Esperance, 10/42; Battle of Guadalcanal, 11/42; and Battle of Kula Gulf (sunk 7/6/43). The name was transferred to *Cleveland-Fargo* class CL.113 (never completed).

U. S. S. JUNEAU: CL.52

Atlanta class. 6,000 tons, 16 x 5" guns, launched 10/25/41. An anti-aircraft cruiser.

Service Highlights: Battle of Santa Cruz, 10/42; and Battle of Guadalcanal (badly damaged and sunk by a submarine the following morning, 11/13/42—among the losses were all five of the Sullivan brothers, for whom a destroyer was later named). The name was transferred to a new *Atlanta* class CL.119.

U. S. S. SAN DIEGO: CL.53

Atlanta class. 6,000 tons, 16 x 5" guns, launched 7/26/41. An anti-aircraft cruiser.

Service Highlights: Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; and Battle of Leyte Gulf, 10/44. Scrapped in 1960.

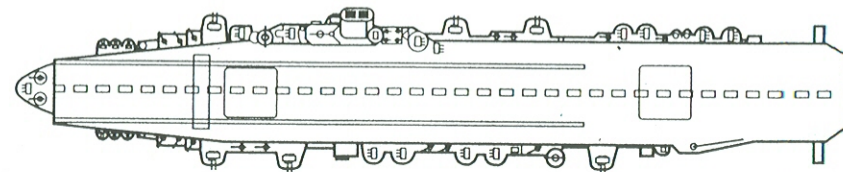
U. S. S. SAN JUAN: CL.54

Atlanta class. 6,000 tons, 16 x 5" guns, launched 9/6/41. An anti-aircraft cruiser.

Service Highlights: Guadalcanal landings and Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42 (damaged); and Battle of the Philippine Sea, 6/44. Scrapped in 1962.

IMPERIAL JAPANESE NAVY

AIRCRAFT CARRIERS (CV):



I. J. N. HIYO: CV

Junyo class. 24,140 tons, 53 aircraft capacity, launched 6/24/41. Name translates as "Flying Hawk". Originally laid down as a fast luxury liner.

Service Highlights: Battle of Guadalcanal, 11/42; and Battle of the Philippine Sea (sunk by attacks from American carrier aircraft, 6/20/44).

I. J. N. JUNYO: CV

Junyo class. 24,140 tons, 53 aircraft capacity, launched 6/26/41. Name translates as "Obedient Hawk". Originally laid down as a fast luxury liner.

Service Highlights: Aleutians, 6/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; and Battle of the Philippine Sea, 6/44. Scrapped in 1947.

I. J. N. SHOKAKU: CV

Shokaku class. 25,675 tons, 84 aircraft capacity, launched 6/1/39. Name translates as "Soaring or Heaven Bound Crane".

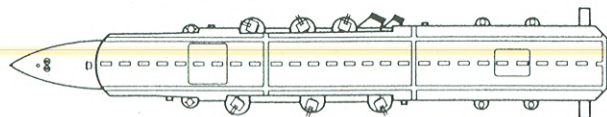
Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of the Coral Sea, 5/42 (damaged); Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42 (damaged); and Battle of the Philippine Sea (sunk by a submarine, 6/19/44).

I. J. N. ZUIKAKU: CV

Shokaku class. 25,675 tons, 84 aircraft capacity, launched 11/27/39. Name translates as "Happy or Lucky Crane".

Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of the Coral Sea, 5/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of the Philippine Sea, 6/44 (damaged); and Battle of Leyte Gulf (sunk by American carrier aircraft, 10/25/44).

LIGHT AIRCRAFT CARRIERS (CVL):



I. J. N. RYUJO: CVL

Ryujō class. 10,600 tons, 48 aircraft capacity, launched 4/2/31. Name translates as "Vigorous Dragon".

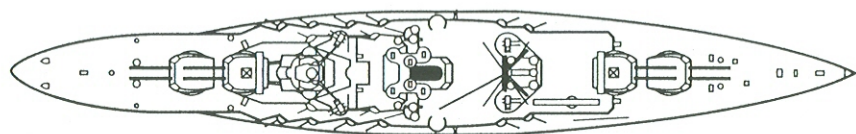
Service Highlights: Indian Ocean raid, 4/42; Aleutians, 6/42; Battle of the Eastern Solomons (sunk by American carrier aircraft, 8/24/42).

I. J. N. ZUIHO: CVL

Shoho class. 11,262 tons, 30 aircraft capacity, launched 6/19/36, but not completed as a carrier until 1940. Name translates as "Happy or Lucky Bird of Paradise".

Service Highlights: Battle of Midway, 6/42; Battle of Santa Cruz, 10/42 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk by American carrier aircraft, 10/25/44).

BATTLESHIPS (BB):



I. J. N. HARUNA: BB

Kongo class. 31,720 tons, 8 x 14", 14 x 6" and 8 x 5" guns, launched 12/14/13. Built as a battlecruiser, converted to a fast battleship in the 1930s. Named after a Japanese mountain.

Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; Battle of the Philippine Sea, 6/44 (damaged); Battle of Leyte Gulf, 10/44; and sunk by air attacks, 7/28/45.

I. J. N. Hiei: BB

Kongo class. 31,720 tons, 8 x 14", 14 x 6" and 8 x 5" guns, launched 11/21/12. Built as a battlecruiser, converted to a fast battleship in the 1930s. Named after a Japanese mountain.

Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; and Battle of Guadalcanal (disabled in surface action and sunk by aircraft, 11/13/42).

I. J. N. KIRISHIMA: BB

Kongo class. 31,980 tons, 8 x 14", 14 x 6" and 8 x 5" guns, launched 12/1/13. Built as a battlecruiser, converted to a fast battleship in the 1930s. Named after a Japanese mountain.

Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; and Battle of Guadalcanal (sunk by U. S. S. *Washington*, 11/15/42).

I. J. N. KONGO: BB

Kongo class. 31,720 tons, 8 x 14", 14 x 6" and 8 x 5" guns, launched 5/18/12. Built in Great Britain as a battlecruiser and as a model for the class, converted to a fast battleship in the 1930s. Named after a Japanese mountain.

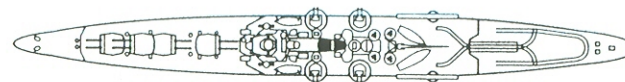
Service Highlights: Pearl Harbor attack, 12/41; Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44; and sunk by a submarine, 11/21/44.

I. J. N. MUTSU: BB

Nagato class. 39,130 tons, 8 x 16", 18 x 5.5" and 8 x 5" guns, launched 5/31/20. Named after an area in Japan.

Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 10/42; and sunk by an accidental explosion, 6/8/43.

SEAPLANE TENDERS (AV):



I. J. N. CHIKUMA: AV

Tone class. 11,215 tons, 8 x 8" and 8 x 5" guns and 5 aircraft capacity, launched 3/19/38. Named after a Japanese river. A modified heavy cruiser designed to operate floatplanes in support of aircraft carriers.

Service Highlights: Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk 10/25/44).

I. J. N. CHITOSE: AV

Chiyoda class. 11,023 tons, 4 x 5" guns and 24 aircraft capacity, launched 11/29/36. Named after an area in Japan. Converted to a light aircraft carrier during 1943.

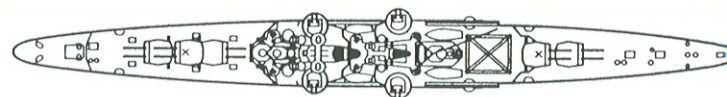
Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk 10/25/44).

I. J. N. TONE: AV

Tone class. 11,215 tons, 8 x 8" and 8 x 5" guns and 5 aircraft capacity, launched 11/21/37. Named after a Japanese river. A modified heavy cruiser designed to operate floatplanes in support of aircraft carriers.

Service Highlights: Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf, 10/44 (damaged); and sunk by American carrier aircraft at Kure dockyard, 7/24/45).

HEAVY CRUISERS (CA):



I. J. N. AOBA: CA

Aoba class. 9,000 tons, 6 x 8" and 4 x 4.7" guns, launched 9/25/26. Named after a Japanese castle.

Service Highlights: Battle of the Coral Sea, 5/42; Battle of the Eastern Solomons, 8/42; Battle of Cape Esperance, 10/42 (damaged); and sunk by aircraft in Kure dockyard, 7/28/45.

I. J. N. ATAGO: CA

Takao class. 13,400 tons, 10 x 8" and 8 x 5" guns, launched 6/16/30. Named after a Japanese hill.

Service Highlights: Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; carrier raid on Rabaul, 11/43 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk by a submarine, 10/23/44).

I. J. N. CHOKAI: CA

Takao class. 9,850 tons, 10 x 8" and 4 x 4.7" guns, launched 4/5/31. Named after a Japanese mountain. In constant service as a flagship, Chokai was never refitted and differs considerably from her updated sister ships.

Service Highlights: Indian Ocean raid, 4/42; Battle of Midway, 6/42; Battle of Savo Island, 8/42 (damaged); Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42 (damaged by air attacks); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk 10/25/44).

I. J. N. FURUTAKA: CA

Furutaka class. 9,150 tons, 6 x 7.9" and 4 x 4.7" guns, launched 2/25/25. Named means "Old Hawk".

Service Highlights: Battle of the Coral Sea, 5/42; Battle of the Eastern Solomons, 8/42; and Battle of Cape Esperence (sunk, 10/11/42).

I. J. N. HAGURO: CA

Myoko class. 13,380 tons, 10 x 8" and 8 x 5" guns, launched 3/24/28. Named after a Japanese mountain.

Service Highlights: Battle of the Java Sea, 2/42 (damaged); Indian Ocean raid, 4/42; Battle of the Coral Sea, 5/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Empress Augusta Bay, 11/43 (damaged); Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44 (damaged); and sunk by British destroyers in the Malacca Straits, 5/16/45.

I. J. N. KINUGASA: CA

Aoba class. 9,380 tons, 6 x 8" and 4 x 4.7" guns, launched 10/24/26. Named after a Japanese mountain.

Service Highlights: Battle of the Coral Sea, 5/42; Battle of the Eastern Solomons, 8/42; Battle of Guadalcanal (sunk by land and carrier air strikes, 11/14/42).

I. J. N. KUMANO: CA

Mogami class. 12,400 tons, 10 x 8" (originally 15 x 6.1", but modified from 1939-1940) and 8 x 5" guns, launched 10/15/36. Named after a Japanese river.

Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44 (damaged); and sunk by air attacks, 11/25/44.

I. J. N. MAYA: CA

Takao class. 13,160 tons, 10 x 8" and 8 x 5" guns, launched 11/8/30. Named after a Japanese mountain.

Service Highlights: Indian Ocean raid, 4/42; Aleutians, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Guadalcanal, 11/42 (damaged by air attacks); carrier raid on Rabaul, 11/43 (damaged); Battle of the Philippine Sea, 6/44; and Battle of Leyte Gulf (sunk by a submarine, 10/23/44).

I. J. N. MYOKO: CA

Myoko class. 13,380 tons, 10 x 8" and 8 x 5" guns, launched 4/16/27. Named after a Japanese mountain.

Service Highlights: Indian Ocean, 4/42; Battle of the Coral Sea, 5/42; Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44 (damaged); torpedoed by a submarine, 12/13/44; and irreparably damaged by a British midget submarine, 7/20/45.

I. J. N. SUZUYA: CA

Mogami class. 12,400 tons, 10 x 8" (originally 15 x 6.1", but modified from 1939-1940) and 8 x 5" guns, launched 11/20/34. Name means "Bell Valley".

Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf (sunk 10/25/44).

I. J. N. TAKAO: CA

Takao class. 13,400 tons, 10 x 8" and 8 x 5" guns, launched 5/12/30. Named after a Japanese hill.

Service Highlights: Indian Ocean raid, 4/42; Aleutians, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; Battle of Guadalcanal, 11/42; carrier raid on Rabaul, 11/43 (damaged); Battle of the Philippine Sea, 6/44; Battle of Leyte Gulf, 10/44 (damaged by a submarine); and sunk by British midget submarines at Singapore, 7/31/45).

LIGHT CRUISERS (CL):



I. J. N. ISUZU: CL

Nagara class. 5,170 tons, 7 x 5.5" and 2 x 3" guns, launched 10/29/21.

Service Highlights: Battle of Santa Cruz, 10/42; and sunk by a submarine in the Java Sea, 4/7/45.

I. J. N. JINTSU: CL

Sendai class. 5,195 tons, 7 x 5.5" and 2 x 3" guns, launched 12/8/23.

Service Highlights: Midway Campaign, 6/42; Battle of the Eastern Solomons, 8/42; and Battle of Kolombangara (sunk 7/13/43).

I. J. N. NAGARA: CL

Nagara class. 5,170 tons, 7 x 5.5" and 2 x 3" guns, launched 4/25/21.

Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; Battle of Santa Cruz, 10/42; and sunk by a submarine, 8/7/44.

I. J. N. SENDAI: CL

Sendai class. 5,195 tons, 7 x 5.5" and 2 x 3" guns, launched 10/30/23. Named after a Japanese city.

Service Highlights: Battle of Midway, 6/42; and Battle of Empress Augusta Bay (sunk, 11/2/43).

I. J. N. YURA: CL

Nagara class. 5,170 tons, 7 x 5.5" and 2 x 3" guns, launched 2/15/22.

Service Highlights: Battle of Midway, 6/42; Battle of the Eastern Solomons, 8/42; and Battle of Santa Cruz (sunk by air attacks from Henderson Field, 10/25/42).

8e) THE AIRCRAFT:

8e1) JAPANESE AIRCRAFT:

The game's Japanese air units reflect their wartime designations. Japanese carrier aircraft in 1942 were referred to by the name of their ship. For example, the aircraft assigned to the "Shokaku" were usually referred to as the "Shokaku Fighter Squadron", the "Shokaku Dive Bomber Squadron", and the "Shokaku Torpedo Bomber Squadron", or in the game, the "SF", "SD", and "ST" air units, respectively. The numbers before these letter designations simply show that the squadron was too large to be represented in the game by just one air unit. For example, the "1SF" and "2SF" air units are the two units that together represent the "Shokaku Fighter Squadron". Some smaller units were not included at all, their aircraft being designed into the strength of a larger, more important unit.

The land-based air units, all of which were part of the Navy (Army Air Force units served in other areas), are similarly identified. Japanese land-based naval air units were organized into "Air Groups" that were either named (abbreviations covered below) or numbered (ie., "AG3" = "Air Group 3") for most of 1942. In November, 1942, most Air Groups were renumbered with a three-digit number. This game keeps the earlier names and numbers, but in the explanatory list below, the new numbers are listed in parentheses:

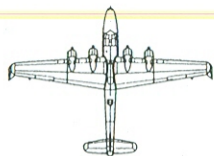
AG2 = Air Group 2 (582)	KS = Kisarazu Air Group (707)
AG3 = Air Group 3 (202)	KY = Kanoya Air Group (751; bomber portion)
AG4 = Air Group 4 (702)	MS = Misawa Air Group (705)
AG6 = Air Group 6 (204)	TN = Tainan (or Tainang) Air Group (251)
AG 253 = Air Group 253 (orig. part of Kanoya)	YK = Yokohama Air Group (801)

Japanese planes were generally lighter, smaller and more lightly armored than Allied planes of the same types, the Japanese versions being designed for long range and/or high maneuverability. Japanese aircraft had a confusing number of different designations, but are best-known in the West by the code names assigned to them by the Allies during the war, such as "Kate", "Val", etc.

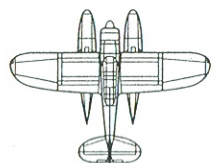
Japanese Long Lance torpedo



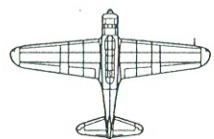
"BETTY" (G4M): This was a two-engine Japanese medium bomber used for search missions, bombing from medium to high altitudes, and, against ships, torpedo attacks. Virtually every unused space held gasoline to increase the aircraft's range, but this also meant that a "Betty" would burst into flame whenever hit. A "Betty" was carrying Admiral Yamamoto over Bougainville when he was shot down and killed by attacking United States P-38 "Lightning" fighter planes on April 18, 1943.



"EMILY" (H8K): This was a very long range Japanese flying boat, designed to replace the older "Mavis". Even more heavily armed and armored than the "Mavis", the "Emily" could also carry a heavy bomb load, or two torpedoes, and could carry them further and faster than a "Mavis" (and much further than any Allied flying boats). If necessary, an "Emily" could remain in the air for over 24 hours! Despite its armor and armament, an "Emily" was not too hard to shoot down, as they were also very large and clumsy.



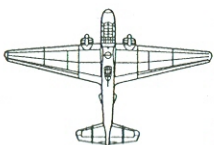
"JAKE" (E13A): This was the latest and best Japanese ship-carried floatplane and featured a useful range. Japanese doctrine was to use these types of floatplanes to scout around a carrier task force, reserving the carrier planes for the attack, rather than using large numbers of carrier aircraft for scouting, as was the practice in American carrier task forces (remember, half of the "Dauntless" aircraft on an American carrier were organized into a "scouting" squadron). Few were available during 1942.



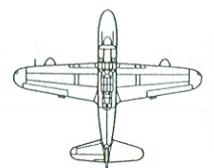
"KATE" (B5N): This was the standard Japanese carrier torpedo bomber. An excellent aircraft for its day, the "Kate" was generally inferior to the newer American "Avenger". It could carry bombs and serve as a level bomber from medium altitudes against land targets. Best of all, the "Kate" carried a reliable torpedo that could be released from a higher altitude and at a faster speed than any Allied torpedoes.



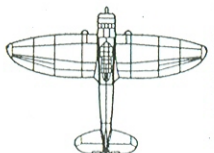
"MAVIS" (H6K): This was a long range Japanese flying boat. Heavily armed and armored for a Japanese plane, it was to be replaced by the improved "Emily", but the slow production of the newer model kept the "Mavis" in action right to the end of the war. The "Mavis" could carry a heavy bomb load, or two torpedoes.



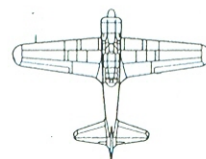
"NELL" (G3M): This was an older two-engine Japanese medium bomber used for search missions, level bombing from medium altitudes, and torpedo attacks. In the process of being replaced by the "Betty" in 1942, "Nell, Nell, the Pacific Belle" continued to soldier on until the end of the war. The most noteworthy event involving "Nells" was their sinking of the battleship H. M. S. "Prince of Wales" and the battlecruiser H. M. S. "Repulse" in December, 1941.



"RUFÉ" (A6M2-N): The "Rufe" was a floatplane version of the "Zero". The float reduced handling, speed, and range in every respect, but, for 1942, the "Rufe" was useful as a fighter plane at places that lacked proper land airstrips, still being able to hold its own with many of the Allied fighter types, and quite capable of shooting down bombers or snooping scout aircraft.



"VAL" (D3A): This was the standard Japanese carrier dive bomber. Still an excellent airplane in 1942, its fixed landing gear showed that it was already approaching obsolescence. Able to carry less of a bomb load than its counterpart, the "Dauntless", its highly skilled aircrews are what made it a deadly weapon in the vicious carrier battles of 1942.



"ZERO" (A6M): This was the standard Japanese Navy fighter. The carrier-borne Model 21 "Zero" (also codenamed "Zeke") featured a long range, but this same model flown by the crack land-based Japanese units was capable of flying incredible distances. Another land-based version, the Model 31 was code-named "Hamp" and featured a much lower range. Training and equipment therefore account for the differences in Japanese fighter unit ranges in the game. Fast and maneuverable, the "Zero" was, in the skilled hands of the Japanese navy pilots, the best fighter aircraft in the Pacific during 1942.

8e2) ALLIED AIRCRAFT:

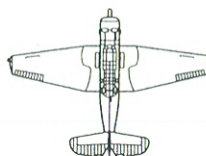
The game's Allied air units reflect their wartime designations. The aircraft aboard an American carrier in 1942 were normally organized into four squadrons: one fighter (F), one (dive) bomber (B), one scout (S; these also contain dive bomber aircraft), and one torpedo bomber (T). These squadrons often all had the same number, which matched their ship's hull number (this was the pre-war custom, but broke down under wartime emergency conditions). For example, the squadrons assigned to the "Enterprise" (CV.6) at the Battle of the Eastern Solomons were "Fighter or Fighting 6" (or "VF-6"; the Navy always included the letter "V" in their heavier-than-air unit designations, but it is dropped in the game to save space on the unit counters), "Bomber or Bombing 6" ("VB-6"), "Scouting 5" ("VS-5") and "Torpedo 3" ("VT-3"), or in the game, the "F6", "B6", "SS" and "T3" air units, respectively. The numbers before these designations simply show that the squadron was too large to be represented by just one air unit. For example, the "1F6" and "2F6" air units are the two units that together represent the "Fighter 6" Squadron. As with the Japanese, some smaller units were not included.

U.S.M.C. squadrons in 1942 were all land based and designated similarly to naval squadrons, but also always included the letter "M" for "Marine". The two types of Marine squadrons on Guadalcanal were "VMF" ("F" = "Fighter") and "VMSB" (the "SB" means "Scout-Bomber", thus combining the functions of both bomber squadrons aboard an aircraft carrier), and their game designations are similar to those of the carrier units. United States Army Air Force aircraft were organized into "Groups"; e.g., "1BG11" and "2BG11" are the units representing the "11th Bomber Group". "FG" = "Fighter Group". All Australian units have their squadron numbers followed by the letter "A". Although there are no New Zealand air combat units present, many of the "Hudson" scouts were in New Zealand units.

Allied aircraft types generally sacrificed range qualities for superior armor protection, survivability and firepower. Most American-designed aircraft had a letter or letter-number designation and a "popular name", while British-designed aircraft just had the name.

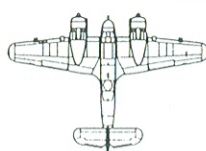


"AIRACOBRA" (P-39): Tough but not too maneuverable, the P-39 "Airacobra" was not suited for first-line fighter duties, but had to perform them for the lack of something better. With a powerful 37mm cannon in the nose, the aircraft was a powerful fighter-bomber against enemy ground forces. During the game's period, many of the "Airacobras" that were available on the Searchboard area were an inferior model originally produced for export called the "P-400".

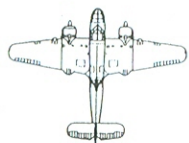


"AVENGER" (TBF): Developed to replace the older "Devastator", the "Avenger" was superior to the Japanese "Kate", and proved to be one of the most versatile carrier aircraft of the war. Unfortunately, for all the aircraft's strong points, the Avenger was handicapped in 1942 by carrying an unreliable torpedo that required the aircraft to fly much lower and slower than was the case with the corresponding Japanese aerial torpedo. This type was flown later in WW II by future

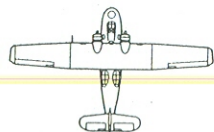
U. S. President George Bush.



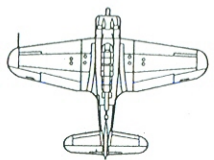
"BEAUFIGHTER": This British-designed two-engine aircraft was developed from the earlier "Beaufort" torpedo bomber, and saw service as a night fighter and strike aircraft (its common use in the game). During the period covered by the game, most of these present would have been built in Great Britain and shipped to Australia, where domestic production of the type was just getting under way.



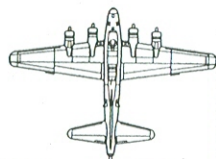
"BEAUFORT": This British-designed two-engine aircraft was designed as a land-based torpedo bomber and light attack bomber. Less capable than its more modern offspring, the "Beaufighter", the was still a very useful aircraft, and like the "Beaufighter", was also gearing up for use and production in Australia during the period covered by the game.



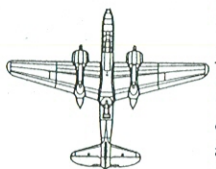
"CATALINA" (PBY): Inferior in range to the Japanese "Mavis" or "Emily", the "Catalina" was still an excellent and dependable long range search plane. Much cheaper to build and maintain than its Japanese counterparts, the "Catalina" could carry two torpedoes, and the planes were operated by some of the best aircrews in the United States Navy. On board radar and rigorous training gave these aircraft an effective night capability by late 1942.



"DAUNTLESS" (SBD): This was the standard American carrier dive bomber. It was tough and maneuverable, sturdy and reliable, and destined to serve through the entire war, although replaced on carriers by newer types in 1944. The "Dauntless" was superior to the Japanese "Val". Endowed with a host of affectionate nicknames, including "the Dauntless Lass" and "Slow But Deadly" (from its service initials "SBD"). The champion sinker of aircraft carriers of *all* time.



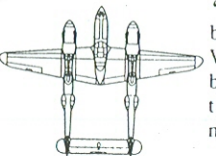
"FLYING FORTRESS" (B-17): This was the Allied long-range four-engine heavy bomber in the Pacific in 1942. The original design of the "Flying Fortress" called for it to fly far out to sea and destroy enemy fleets with high altitude precision bombing. This is exactly how they were used at in the Pacific during 1941 and 1942, but few hits were scored, although many were claimed. So much for pre-war theories! A Flying Fortress could prove to be almost too much for the lightly armored "Zeros" to handle. The "Flying Fortresses" based on the eastern side of the Searchboard were generally newer, better maintained, and could carry more fuel than those based in Australia, accounting for their superior range.



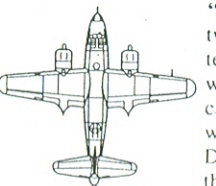
"HAVOC" (A-20): A maneuverable light attack bomber, the "Havoc" (known as the "Boston" in British service) proved to be a jack-of-all-trades in many air forces around the world. Like the larger and longer-ranged "Mitchell", the "Havoc" started sporting a formidable battery of nose guns at the end of 1942, but, like many other Allied aircraft during 1942, the "Havoc" crews had not yet acquired the armament or techniques that would greatly increase their effectiveness later in the war.



"HUDSON" (A-28): The "Hudson" was an American designed light bomber. Pretty much a failure in the bomber role, it was found that with extra gas instead of bombs it made a decent search plane. In the area covered by the game's Searchboards, the "Hudson" was mainly operated as a reconnaissance aircraft by the Royal Australian and New Zealand Air Forces.



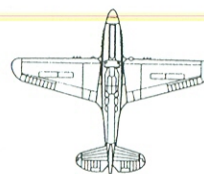
"LIGHTNING" (P-38): Although the "Lightning" would later become renowned as the mount of the top American fighter "aces" in World War II, the machine was just starting to arrive in the Searchboard area in 1942. Many "bugs" still needed to be worked out before the "Fork Tailed Devil" would reach its full potential and make its mark on the Pacific War.



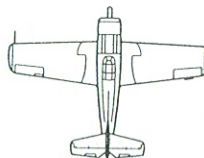
"MARAUDE" (B-26): The sleek "Widowmaker" was a fast, "hot", two-engined medium bomber. Its speed and maneuverability made it a terror in the air, but the "Marauder" required careful maintenance and well-maintained airfields to operate effectively. Normally capable of carrying a variety of bombs, the "Marauders" in the Pacific during 1942 were specifically modified to carry torpedoes for attacks on shipping. During 1943, this type was pulled out of the Pacific theater in favor of the more docile and easier to care for "Mitchells" and "Havocs".



"MITCHELL" (B-25): This was a reliable and tough two-engined medium bomber. Later models would be optimized for low-level attacks by the installation of massive batteries of guns in the nose (one model had twelve heavy machineguns in the nose, while another had eight heavy machineguns and a 75mm cannon), but in 1942 the aircraft was still being used primarily for medium-altitude level bombing. Until the proper armament and tactics were developed, the "Mitchell", while still dangerous, was not yet the terror of Japanese shipping that it would later become.



"WARHAWK" (P-40): Earlier models of the P-40 had been known as the "Kittyhawk" and the "Tomahawk", but all models from the P-40E on were known as the "Warhawk", and these were the primary models available during the game's time period. Sometimes called the "best second-best fighter of the war", the P-40 was almost always outclassed by the performance of enemy fighters, but could trade on its toughness, firepower, and clever tactics (such as those used by the "Flying Tigers" with their P-40s in Asia) to hold its own.



"WILDCAT" (F4F): This was the standard American carrier fighter. Better protected than its more nimble "Zero" adversary, the "Wildcat" pilots in mid 1942 were just starting to develop effective tactics to deal with the "Zero". By the start of the Guadalcanal campaign, better Allied tactics, combined with the loss of many skilled Japanese fighter pilots, made the "Wildcat" and "Zero" roughly equal when they met.

[9] HINTS ON PLAY

GUADALCANAL duplicates the most important aspects of air and sea warfare in the Pacific in 1942. As such, the historically successful tactics are also those which will prove successful in the game. There are numerous possibilities regarding plans and tactics that may be tried, and this section can only provide a few general hints and observations.

First, pay close attention to observation, as this is the key to the game. Avoid wasting units searching areas where the enemy cannot be, or areas too distant to matter. If the enemy can be found, and fails to find you, the game is half won. Get maximum use from your long-range land-based scout plane units ("Catalina", "Hudson", "B-17", "Emily", "Mavis", and "Betty") in conducting searches. The Japanese player should try for maximum use of their "Jake" floatplane scout units, saving carrier aircraft for attacks. Make thorough searches by placing the scout units close enough together so that all necessary hexes in an area can be observed. Stagger the take off times for scout plane units, holding some in reserve for use during the next Turn. The reserve units can then be used to continue the search when the previous ones have to return.

Second, keep a "combat air patrol" ("CAP") of fighters over all-important task forces and over threatened bases during all day Turns. Do not neglect to keep fighters over any transports, as these are especially vulnerable to enemy air strikes. If an attack threatens, get all planes into the air, and reinforce the CAP with every available plane. Do not waste fighter units flying CAP over non-essential or non-threatened bases or task forces—keep them where they are needed. There never seem to be enough fighters, so why waste the ones you have?

Third, organize your task forces very carefully. It may appear that the best strategy is to place multiple flattops in one Searchboard hex, and then surround them with the best anti-aircraft ship units to provide maximum protection at one point, but this is not necessarily true. A large, well-organized air attack can always get through and cause some damage, regardless of the anti-aircraft factors available around any one ship. An attack that got through, and scored some hits on each of two or more carriers would reduce their capabilities and effectively put these ships out of the game. If each carrier is provided with its own separate "ring" of escorting ships, a much larger *total* number of ship units could be used to protect the two, and more anti-aircraft factors would have to be faced to attack more than one carrier. Keep carriers and transports out of surface engagements. Form special task forces for surface missions, and keep the vulnerable, high-victory-point-value ships to the rear.

Last, remember that these hints are only suggestions, not rules. The game is very much a "player's game" and allows for experimentation and unorthodox plans. A plan that works perfectly in one game can fail miserably in the next. Surprise can be decisive!

[10] EXAMPLES OF PLAY

These examples are intended to clarify the game's rules by showing them in use. Only the Basic Game Rules apply to these examples. This example follows the same forces through the steps and phases of a typical Turn. It may be helpful to take the components needed and "play along" while reading through this example. It is October 27, Turn 2 (a day Turn, so "flying" is possible—see 3a1) and the Task Force 17 marker is located in hex "Q5" on the Allied Searchboard. Task Force 17 has not yet been spotted by the Japanese side. The "Hornet" ship unit is located (with the "Juneau", "Pensacola" and DD #6 ship units) in the "Ships" box of the Task Force 17 area on the Allied Operations Card. The "B8", "T6", and "SS" air units are in the "Ready" box, and the "S8" and "VV" air units are in the "Arming" box of the "Hornet" area.

10a) ACTION PHASE (3): This phase consists of four distinct steps, after the "sides" for the Turn are determined. Comparative dice rolls of "4" for the Allies and "6" for the Japanese at the start of the Action Phase establish that the Japanese are Side "A", so the Allied side must go first during each of the following steps and phases.

Assembly Step (3a): Since "Hornet" has a launch number of "4" (see its area on the Allied Operations Card), any or all of the three units in the "Ready" box may "take off" to "fly" by being shifted to the Task Force 17 "Normal Strike" box. It is not necessary for any or all of these air units to "take off", only those desired by the Allied player. If a fourth air unit was also located in the "Ready" box, it could "take off", too, but the "S8" and "VV" air units, being in the "Arming" box, may not "take off". The Allied player shifts the three air units to the Task Force 17 "Normal Launch" box. When the Allied side is finished, the Assembly Step is then performed on the Japanese Operations Card by the Japanese side.

Ready Step (3b): During the Ready Step (still on the Allied Operations Card) the "S8" and "VV" air units are shifted to the "Ready" box in the "Hornet" area, for possible "take off" on the next Turn. When the Allied side is finished, the Ready Step is then performed on the Japanese Operations Card by the Japanese side.

Sea Movement Step (3c): The Task Force 17 marker is moved to hex "P4" on the Allied Searchboard. When the Allied side is finished, the Sea Movement Step is then performed on the Japanese Searchboard by the Japanese side.

Air Movement and Search Step (3d): Scout SS is moved individually and first, successively into hexes "P3", "P2", "O2", "N1", "N2", and "M3" on the Allied Searchboard.

GAME HINT: If originating from a task force marker that has not yet been spotted, it is a good idea not to call out and search the first few hexes entered by an air unit to keep the opponent guessing as to where it came from.

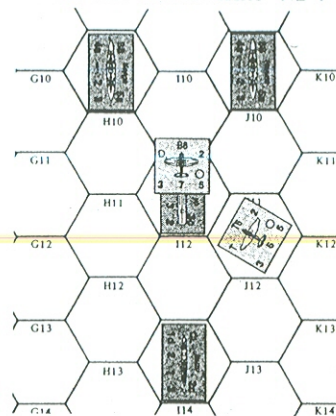
Only the last four hexes entered are announced, and the Japanese player informed the Allied player that a task force marker (in fact, it is the Advance Force marker) is "spotted" in hex "N2", containing the undamaged ship units for carrier "Junyo", battleships "Haruna" and "Kongo", and light cruiser "Isuzu". An enemy task force marker is placed in hex "N2" on the Allied Searchboard to record this "spotting". Note that the Allied player did not stop searching in hex "N2", but kept moving after "spotting" into hex "M3". The "B8" and "T6" air units are removed from Task Force 17's "Normal Strike" box, placed on the Allied Searchboard, and moved together (3d2) as an air strike successively into hexes "O4", "N3", and "N2". Only "N3" is announced, and nothing new is "spotted".

GAME HINT: Normally, a player will not wish to call out the locations of unspotted task force markers, as this reveals their locations. However, it is a good idea to conduct sea search with all spotted task force markers, and on every Turn, with the base units.

Unspotted, the Allied player does not announce a sea search with the Task Force 17 marker. However, this is one of the disadvantages of going first, and, when the Japanese player performs the same step, Task Force 17 is "spotted" by a Japanese scout air unit, and an air strike is moved to hex "P4" from an unknown (to the Allied player) location.

10b) COMBAT PHASE (4): Side A (the Japanese this Turn) decides the order in which combats are fought, and the Japanese player decides that the battle in hex "N2" will be resolved first, followed by the one in hex "P4".

THE BATTLE IN HEX "N2":



Anti-Aircraft Combats: The attacking Japanese player, faced with two air units both in range (4c1) of all ship units, decides to concentrate on the dive bomber, but to also take a shot at the torpedo bomber, hoping for some luck, in this desired order:

- "Haruna" ship unit ("2" anti-aircraft factor), "Kongo" ship unit ("2" anti-aircraft factor), "Junyo" ship unit ("3" anti-aircraft factor) have a total modifier of "7" versus the "B8" air unit ("2" defense factors). No other combat modifiers apply. The Japanese attacker rolls a "6" ("+7" total modifier) = "13" combat number versus the Allied defender's roll of "5" ("+2" total modifier) = "7" combat number. The attacker is more (4b4), but not two times as much, so one hit is scored. Mark the "B8" air unit with a 1 hit marker.

- "Isuzu" ship unit ("1" anti-aircraft factor) versus "T6" air unit ("2" defense factors). No other combat modifiers apply. The Japanese attacker rolls a "2" ("+1" total modifier) = "3" combat number versus the Allied defender's roll of "7" ("+2" total modifier) = "9" combat number. The attacker is less (4b4), so there is no damage.

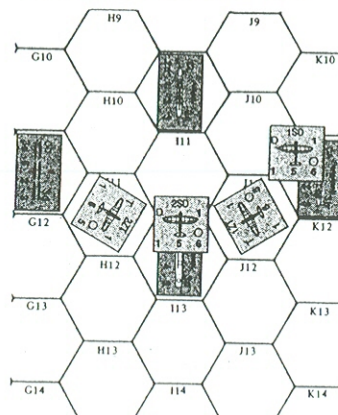
Bombing Combat: The attacking Allied player has two different bombing categories, so there will be two separate attacks on the "Junyo" ship unit, resolved in this desired order:

- **Dive Bombing Category Attack:** Air unit "B8" (the 1 hit marker placed due to the anti-aircraft combat reduces its "7" bombing factors to a "6"—see 4b5) versus the "Junyo" ship unit ("3c" defense factors; the letter has no meaning unless option 16 is used, so only the "3" is considered). No other combat modifiers apply. The Allied attacker rolls a "4" ("+6" total modifier) = "10" combat number versus the Japanese defender's roll of "6" ("+3" total modifier) = "9" combat number. The attacker is more (4b4), but not two times as much, so one hit is scored. Mark the "Junyo" ship unit with a 1 hit marker.

- **Torpedo Bombing Category Attack:** Air unit "T6" ("6" bombing factors) versus "Junyo" ship unit (the 1 hit marker from the dive bombing attack reduces its "3c" defense factor to "2c"). No other combat modifiers apply. The Allied attacker rolls a "6" ("+6" total modifier) = "12" combat number versus the Japanese defender's roll of "3" ("+2" total modifier) = "5" combat number. The attacker is two times (4b4), but not three times as much, so the defending unit is flipped over. Turn over the "Junyo" ship unit so that its back side is face up, and remove its 1 hit marker.

Battle's End: The "Junyo" (now with its back side facing up) and other ship units are returned to the "Ships" box of the Advance Force area on the Japanese Operation Card. The two Allied air units (with "B8" now stacked with a 1 hit marker) are returned to Allied Searchboard hex "N2".

THE BATTLE IN HEX "P4":



10b2) Battle Hex "P4": The Allied player empties the "Ships" box of Task Force 17 on the Allied Operations Card and sets up the ship units on the Battleboard as shown in the diagram. The Japanese player then takes all combat air units out of Japanese Searchboard hex "P4" and places them on the Battleboard as shown (4a3).

Anti-Aircraft Combats: Within the limitations of the particular type of combat's rules, the attacker always determines how the individual combats are resolved.

GAME HINT: The Allied player divides the combats as shown on the previous page in hopes of eliminating the "2ZT" air unit to avoid the "anvil" combat modifier (4d3.1) and also eliminating or at least reducing the "1SD" air unit to avoid the dive bomber combat modifier (4d3.3) during the later bombing combat.

The attacking Allied player chooses to resolve the following anti-aircraft combats in the following order:

- The "Juneau", "Pensacola", and "DD #6" ship units ("7" total anti-aircraft factors) versus the "1ZT" air unit ("1" defense factor). No other combat modifiers apply. The Allied attacker rolls a "7" ("7" total modifier) = "14" combat number versus the Japanese defender's roll of "4" ("1" total modifier) = "5" combat number. The attacker is two times (4b4), but not three times as much, so the defending unit is flipped over. Turn over the "1ZT" air unit so that its back side is face up.
- The "Hornet" ship unit ("4" anti-aircraft factor) versus the "2SD" air unit ("1" defense factor). No other combat modifiers apply. The Allied attacker rolls a "6" ("4" total modifier) = "10" combat number versus the Japanese defender's roll of "6" ("1" total modifier) = "7" combat number. The attacker is more (4b4), but not two times as much, so one hit is scored. Mark the "2SD" air unit with a 1 hit marker.

Bombing Combat: The attacking Japanese player chooses to resolve the following bombing combats in the following order:

• **Bombing Attacks On the "Hornet":**

Torpedo Bombing Category Attack: Air units "1ZT" and "2ZT" ("6" bombing factors each, but being flipped due to the anti-aircraft combat gives "1ZT" only "3" bombing factors—see 4b5) are making an "anvil" attack ("3" combat modifiers; see 4d3.1) and have a total modifier (4b2) of "+11" versus the "Hornet" ship unit ("3c" defense factors—the letter has no meaning unless option 16 is used, so only the "3" is considered). No other combat modifiers apply. The Japanese attacker rolls a "3" ("11" total modifier) = "14" combat number versus the Allied defender's roll of "4" ("3" total modifier) = "7" combat number. The attacker is two times as much (4b4), but not three times as much, so the defending unit is flipped over. Turn over the "Hornet" ship unit so that its back side is face up.

Dive Bombing Category Attack: Air unit "2SD" (the 1 hit marker placed due to the anti-aircraft combat reduces its "5" bombing factors to "4"; see 4b5) is making a dive bombing attack on a ship unit that has a combat air unit in its Operations Card "Ready" box (remember that the "S8" air unit was shifted to the "Ready" box during the Ready Step; if only the "VV" air unit—which is a scout, not a combat air unit—was in the "Ready" box there would be no effect; this adds a "+4" combat modifier—see 4d3.3) and has a total modifier (4b2) of "+8" versus the "Hornet" ship unit (now "2c" defense factors because that is the number on its back side). No other combat modifiers apply. The Japanese attacker rolls a "3" ("8" total modifier) = "11" combat number versus the Allied defender's roll of "7" ("2" total modifier) = "9" combat number. The attacker is more (4b4), but not two times as much, so one hit is scored. Mark the "Hornet" ship unit with a 1 hit marker.

• **Dive Bombing Category Attack On the "Pensacola":** Air unit "1SD" ("5" bombing factors) versus the "Pensacola" ship unit ("3b" defense factors). No other combat modifiers apply. The Japanese attacker rolls a "3" ("5" total modifier) = "8" combat number versus the Allied defender's roll of "5" ("3" total modifier) = "8" combat number. The combat numbers are equal (4b4), so there is no damage.

Battle's End: The Allied ship units (with "Hornet" now flipped and with 1 hit marked) are returned to the "Ships" box of the Task Force 17 area on the Allied Operation Card. The Japanese air units (with "1ZT" flipped over and "2SD" marked with 1 hit) are returned to Japanese Searchboard hex "P4".

10c) AIR RETURN PHASE: This considers only the air units that "took off" from the "Hornet". Scout air unit "SS" (from Searchboard hex "M3"), the "B8" and "T6" air units (from Searchboard hex "N2") are moved to Searchboard hex "P4" (location of the Task Force 17 marker and the "Hornet" ship unit), and placed in the Hornet area's "Arming" box on the Allied Operations Card.

10d) TURN RECORD PHASE: Both players advance their turn markers on their own TIME RECORD TRACK. It is a good idea to check and make sure there is agreement as to the current Turn. If nothing else happens the rest of the game (highly unlikely!), victory points, based only on what was covered here, total as follows (see 7a3):

- The Japanese side gets 10 victory points since "Hornet" (a CV) was flipped.
- The Allied side gets 10 victory points since "Junyo" (also a CV) was flipped.

OPTIONAL RULES

The Basic Game rules and the various scenarios provide for a great variety of games, although more experienced players may wish to go for even more variety and more realism by using some or all of these additional optional game rules. These options are just that—optional—they may be added to the game singly or in just about any combinations to suit player's tastes. Each optional rule adds some additional scope and detail to the game, as well as some additional complexity and playing time. It is suggested that players master the Basic Game rules before trying any of the rules in this section. These options, in most cases, simply add to the Basic Game rules, all of which still apply. There are changes to the Basic Game Turn Sequence if some of these options are used (simply ignore the parts that apply only to options that are not used), and a COMPLETE SEQUENCE OF PLAY (incorporating all optional rules) is found on the Searchboard Screen.

[11] COMBAT OPTIONS

11a) THE FREE ROLL MARKER: If this option is used, every scenario starts with one given side holding the free roll marker, that side being given in the scenario's Special Rules section. The free roll marker can be used whenever the holding player desires to re-roll the dice *once* for any one combat (rolls for purposes other than combat are not allowed). Obviously, this should be used only in a case where the holding player is very unhappy with the original rolls! After the dice are rolled for a combat, the player holding the free roll marker announces that it is to be used. The original rolls are then ignored, and *both* dice are rolled again to resolve the combat. The new rolls resolve the combat. After use of the free roll marker, it is then passed to the other player, who can then hold it until he desires a re-roll on any later combat, after which it is passed to the other player, etc.

11b) AIRCRAFT DAMAGE ON DAMAGED BASE AND SHIP UNITS: When a base or a ship unit is damaged, this may mean that the air units "On Ground" or "On Board" these units are also damaged. When a base or ship unit takes a hit or hits and/or is flipped over (ie., this is handled the same, regardless of the severity of the damage) during a Combat Phase, any air units in its "Arming" and/or "Ready" boxes must, in any order, be checked for damage at the end of the Combat Phase. This is done by both sides competitively rolling a die once per air unit involved, and marking damage the same as in a combat. For each roll, the player controlling the air unit is the defender, and the opponent is the attacker.

11b1) If the air unit is "On Board" a ship, there is a "+2" modifier to the defending die roll, and no modifier to the attacking die roll.

11b2) If the air unit is "On Ground" at a base, there is a "+3" modifier to the defending die roll, and no modifier to the attacking die roll.

11b3) A "1 hit" result is not marked and has no effects on a scout air unit. However, if the attacker's combat number is at least two times more than the defender's combat number, a scout air unit is eliminated.

11b4) If a base or ship unit is eliminated, all air units "On Ground" or "On Board" are still also eliminated, as in Basic Game rule 4b5.

11c) DEAD IN THE WATER: Any ship unit that represents an *individual* ship (ie., this does not apply to "AP", "APD" or "DD" units) is considered to be "dead in the water" and inca-

pable of movement if it is flipped to its back side *and* also has a 2 hits marker on it. The following special rules apply to a ship unit that is "dead in the water":

11c1) In a Surface Combat (see option 16), a "dead in the water" ship unit may not be moved or used in a breakoff attempt. If *all* the ship units on one side are "dead in the water", and an enemy ship(s) that is not "dead in the water" also remains on the Battleboard after a Surface Combat is ended, the "dead in the water" ship units are automatically eliminated.

11c2) A "dead in the water" ship unit may be "towed" on the Searchboard (see option 12a4). Air units may not "take off" or "land" on a "CV", "CVL" or "AV" class ship unit that is "dead in the water", even if it is "towed".

11c3) If there is no wish or ability to "tow" a "dead in the water" ship unit, it may be voluntarily "scuttled", that is, eliminated by the controlling player at the start of a side's Ship Movement Step.

11d) REPAIRS: A limited amount of "repair" is possible for damaged air units that remain "On Board" or "On Ground" for two consecutive *night* Turns, and a limited amount of repair is also possible for damaged base or ship units that remain in the same Searchboard hex for two consecutive *night* Turns. During these two Turns, the base or ship units (or the air



units "On Ground" or "On Board" these units) also may not be engaged in *any* form of combat. If these conditions are met, during the Turn Record Phase of the second night Turn, a player may do the following to repaired units:

11d1) Flip a 2 hits marker over to become a 1 hit marker. This can not be done to an air unit that was used to generate a scout air unit or units (see option 15d).

11d2) Remove a 1 hit marker. This can not be done to an air unit that was used to generate a scout air unit or units (see option 15d).

11d3) Combat air and ship units flipped to their back side may *not* be flipped to their front side. A base unit with its back side showing and no hit marker stacked with it may be flipped back to its front side and a 2 hits marker added.

11e) SUBMARINE ATTACKS: There were numerous submarines for both sides operating in the waters covered by the game's Searchboards. These are not represented in the game, but their effects are abstracted here. At the conclusion of an Air Return Phase (including during night Turns), after all air units have been landed and/or marked to patrol (see option 12d) there may be a submarine attack:

11e1) WHO ATTACKS: Both sides roll one die and compare the numbers. There are no modifiers for this roll. If one side's number exceeds the other side's number by three times or more, the side with the larger number may make a "submarine attack". Otherwise, neither side gets a submarine attack.

11e2) WHAT CAN BE ATTACKED: A side getting a submarine attack may only use it against any opposing task force marker on which there is "exact" information (this is the Basic Game information or as covered in 15a1.2). If there is no such task force marker, there is no submarine attack. After choosing a task force, the attacking side selects a specific ship unit in the task force as the target unit.

11e3) SUBMARINE ATTACK PROCEDURE: Both sides roll a die and combat is resolved and marked normally, using the following combat modifiers (for easy reference, these are also printed on the Searchboard Screen):

11e3.1) ATTACKER MODIFIERS:

- +3: The attack comes during a night Turn.
- 1: Attacking a destroyer ("DD") ship unit.
- +4: Attacking a "dead in the water" ship unit.

11e3.2) DEFENDER MODIFIER:

- +1: Per destroyer (this is for *individual* destroyers, of which there may be three to six per destroyer ship unit) in the task force marker (this is just in the individual task force marker, not those in other task force markers in the same hex).

11f) DIFFERENT SHIP INTERVALS: Under air attack, the Japanese deployed their ship at wider intervals (usually around 3,000 yards apart) to allow each ship to make violent, independent maneuvers. Allied doctrine was to keep their ships closer together (often about 2,000

yards apart) and have the escorting ships match the maneuvers of the ships that they were escorting. Using this option, which amends Basic Game rule 4a2, Allied base and ship units are setup exactly as in the Basic Game, with at least one empty hex between and around *all* units. Japanese ship units are setup as in the Basic Game, but there must be at least two empty hexes between and around all units.

[12] MOVEMENT OPTIONS

These rules expand on the players' abilities to realistically use and maneuver their units.

12a) VARIABLE SEA MOVEMENT: Instead of all desired task force markers being moved one Searchboard hex per Turn, as in Basic Game rule 3c, this movement rate varies, depending on the movement factor of the *slowest* ship unit in a task force.

12a1) ONE MOVEMENT FACTOR: A task force marker whose slowest ship unit has a movement factor of "1" is moved one hex every Sea Movement Step (same as in the Basic Game).

12a2) TWO MOVEMENT FACTORS (▲): A task force marker whose slowest ship unit has a movement factor of "2" is moved one hex during most Sea Movement Steps, but can be moved one or two hexes during the Sea Movement Steps of every Turn "3". These Turns are marked with a solid triangle (▲) on the TIME RECORD TRACKS on the Searchboards.

12a3) THREE MOVEMENT FACTORS (I): A task force marker whose slowest ship unit has a movement factor of "3" is moved one hex during the Sea Movement Steps of even-numbered Turns, but can be moved one or two hexes during the Sea Movement Steps of odd-numbered Turns. These Turns are marked with a solid circle (●) on the TIME RECORD TRACKS on the Searchboards.

12a4) TOWING: A ship unit that is "dead in the water" (see option 11c) can be considered to be "towed" if there is another ship unit in the task force that is not dead in the water and available to do the "towing".

12a4.1) Each "dead in the water" ship unit requires one and only one ship unit that is *not* "dead in the water" to "tow" it. No ship unit may be used to "tow" more than one other ship unit. BB, CV, and CVL class ship units may *not* be used to "tow" other ship units.

12a4.2) A "towed" ship unit is considered to have a movement factor of "1" for use during Sea Movement Steps only (ie., move as in rule 12a1). A task force marker containing a "dead in the water" ship unit(s) that is not "towed", may not be moved during a Sea Movement Step.

12a4.3) Only a "towed" ship unit and the ship unit that "tows" it may exit the Searchboards without being considered eliminated (see 2e). To exit, move to a hex on the edge of the Searchboard, then, during the next Sea Movement Step, the ship units are considered to exit the Searchboard. Their task force marker is not considered to exit with them, but is removed if all ships in it do exit. Allied ship units can only exit off the east or south edges of their Searchboard, and Japanese ship units can only exit off the north or west edges of their Searchboard. Ship units that exit may never re-enter the Searchboard, but engage in no further combats. Any damage to exited ship units that is worth victory points is still counted at game's end.

12b) MODIFIED CAPACITY AND LAUNCH: This expands on Basic Game rule 2e4.

12b1) SMALL AIR UNITS: A scout air unit, a combat air unit with an "ELIM" on its back side, or a combat air unit that has been flipped so its back side is up all count as just *one-half* of an air unit when determining ship or base capacities and for use with launch factors. *For example, the Japanese "Chikuma" (AV) has a capacity of "1", but using this option could be used to hold two scout air units.*

12b2) EXPANDED LAUNCHES: This option expands on Basic Game rule 3a. A launch factor may be exceeded to a maximum of *twice* the normal launch factor for that side of the unit with these modifications and restrictions:

12b2.1) Air units using the normal launch factor to "fly" may be shifted to the appropriate "Normal Strike" (the only box used in the Basic Game) and/or "High CAP" (only *Fighter* units) boxes, as desired.

12b2.2) Once the normal launch factor has been used, additional air units not to exceed twice the launch factor can also be shifted into appropriate "flying" boxes to show that they too are "flying"—these are "maximum launch" units.

12b2.3) Maximum launch units may be shifted only into the appropriate "Max. Strike" and/or "Low CAP" boxes.

12b3) EFFECTS OF PLACEMENT IN THE VARIOUS "FLYING" BOXES: Air units shifted to the four "flying" boxes have restrictions on what can be done with them during the Air Movement and Search Step.

Normal Strike 12b3.1) **Normal Strike:** Air units in this box have the same capabilities as those from this same box in the Basic Game. Fighter (see option 14) units placed in this box form part of an air strike as "escort" fighter units for the bomber units in their air strike and will (if possible) accompany them to the target—they may *not* be used for "CAP".

Max. Strike 12b3.2) **Max. Strike:** Combat air units in this box simulate the take offs of additional aircraft and the extra time required to spot them on deck and get them into the air. Units in the "Max. Strike" box are treated as if their movement factors are one less than the normal printed number. As with the "Normal Strike" box, fighter (see option 14) units placed in this box are "escorts" for the bomber units and will (if possible) accompany them to the target—they may *not* be used for "CAP". Note that if used with option 12c1, the movement factor reduction has the effect of reducing the unit's range by two hexes (one each way). If moved with the units in the "Normal Strike" box as a single air strike, they may be dropped off in their last hex if unable to reach a battle hex, the same as covered in Basic Game rule 3d2.

High CAP 12b3.3) **High CAP:** "CAP" = "Combat Air Patrol". Only fighter ("F" class) air units may be placed in these boxes. They are meant to defend the hex from enemy air strikes. They may be used to combat enemy bomber air units using any category of bombing (see 4d1) and/or enemy escort and strafing fighter units, and some or all may be moved to a "High CAP" box (only) located in another hex(es) containing a friendly base unit or task force marker(s) within their movement factor during their side's Air Movement and Search Step.

Low CAP 12b3.4) **Low CAP:** Only fighter ("F" class) air units may be placed in these boxes. They represent fighter aircraft that have not had enough time to gain altitude in order to intercept higher-flying enemy aircraft. They may be used to combat enemy bomber air units that are using the bombing categories of medium level bombing and/or torpedo bombing and/or enemy escort and strafing fighter units, and may *not* be moved from their box or to another hex during their side's Air Movement and Search Step.

12c) **AIR UNIT RANGES:** There are two ways to augment the "reach" of the game's air units.

12c1) **UNEQUAL MOVEMENT LEGS:** Considering both the movement during an Air Movement and Search Step and an Air Return Phase, an air unit actually has a "range" that is twice its movement factors number. With this option, this "range" does not have to be split evenly. This rule applies only to combat air units, and does *not* allow for more movement during an Air Return Phase than during an Air Movement and Search Step. A unit using this type of movement may not also be "staging" (see 12c2). During an Air Movement and Search Step, a combat air unit(s) may be moved a number of Searchboard hexes that exceeds its movement factor, if there is a ship or base where "landing" is possible (meeting all "landing" conditions in rule 5a) located close enough that the total number of hexes moved during the Air Movement and Search Step plus the Air Return Phase does not exceed twice the movement factor. For example, the "B6" Allied dive bomber unit has "5" movement factors and is moved seven hexes during its Air Movement and Search Step, then three hexes during the Air Return Phase, for a total of ten hexes, twice the movement factor. After moving during an Air Movement and Search Step, make a note of the movement still remaining for a unit used in this way.

12c2) **STAGING:** "Staging" involves servicing, fueling and arming at a base or ship that is distant from a target, flying to another closer base or ship, quickly refueling (only) and then performing a mission. The procedure can be reversed to return to the original base, etc. Air units "take off" normally, but, when "staged", are moved from their "Normal Strike" and/or "Max. Strike" box(es) during the Ready Step. An air unit(s) may *not* be used for searching during this movement, and all the usual restrictions on "landing" apply (see 5). Movement factors (including reductions, as in 12b3.2) must allow an air unit(s) to reach a hex where "landing" is possible, and the "staging" air unit(s) are "landed" there. Unlike most "landings", a "staging" air unit(s) must be placed in the area's "Ready" box; take off as early as the next Turn is possible.

12d) **PATROLLING AIR UNITS:** Some scout air units have the word "PATROL" on their back sides (an asterisk on the unit's front side reveals that "PATROL" is on the back). These are air units that can "fly" for exceptionally long periods of time.

12d1) **REMAINS "FLYING":** During an Air Return Phase, if desired, after "landing" all other air units, these scout air units are not moved, but may be flipped over to its back side so that the word "PATROL" shows, and left "flying". Although the back ("PATROL") side remains showing, these "patrolling" scout air units may be moved normally during the next Turn's Air Movement and Search Step and Air Return Phase. Be careful that they end movement close enough to return!

12d2) **SHADOWING:** A scout air unit that is flipped over to its "PATROL" side while located in the same Searchboard hex as an opposing task force(s) may be used to "shadow" a task force marker in that hex. To do so, the controlling player announces that the air unit will be used to "shadow" a specific task force marker (inform the opponent which one) at the start of the opposing Sea Movement Step, before any task force markers are moved.

12d2.1) When the task force marker is moved, the "shadowing" scout air unit is moved with it, and the air unit's side *must* be informed of the movement.

12d2.2) If there are multiple "patrolling" units in the hex, any or all may be assigned to shadow the same task force marker, or they may be announced to "shadow" different task force markers, etc.

12d2.3) The movement (if any) involved in "shadowing" is considered to expend all of the air unit's movement factors, so it is not moved during the Air Movement and Search Step, although its remaining movement factors may be converted to search modifiers (see option 15a1.1) if better information is still sought.

12e) **NIGHT AIR UNITS:** Some air units have an ability to operate at night.

12e1) "Taking off" at night is not difficult. The real problem with night flying in 1942 was finding the targets to attack, and (most dangerous) finding a friendly ship or base at which to "land" at the end of the mission. If this option is used, any scout air units with the ability to "patrol" (see option 12d) may "take off" and "fly" during a night Turn, as long as they "land" during a day Turn. For example, a scout unit could "take off" and "fly" during (night) Turn 1, then "patrol" and return to "land" during (day) Turn 2.

12e2) "Night capable" air units usually had special equipment (such as on-board radar) and/or special training (the most important requirement). Air units which are "night capable" have their basing color in a square shape, instead of in a circle. These units can ignore Basic Game rule 3a1 and the limitations of 12e1 (ie., they can "land" during night Turns).

[13] WAVE ATTACKS

Historically, it was difficult to coordinate large air strikes against a common target area, especially if the range was long. Usually, air strikes from different locations would arrive over the same target area at different times.

13a) **COMBINING AND SEPARATING AIR STRIKES:** This option modifies Basic Game rule 3d.

13a1) **SEPARATIONS:** "Flying" scout air units may still be moved individually, but "flying" combat air units must be moved and kept together only if they originate from the same task force marker or base unit and start from the same strike box. For example, under this modification, air units originating from different task force markers in the same hex can, if desired, be moved to different destinations. Also, air units from a "Normal Strike" box may, if desired, be moved to a different destination than those from a "Max. Strike" box in the same Operations Card area. Under this option, a separate "air strike" (unlike Basic Game rule 3d4, where an "air strike" is always all of the combat air units in a hex) is any stack of combat air units (an "air strike") that had to be or was combined to be moved together.

13a2) **COMBINATIONS:** To put together powerful forces, separate "air strikes" can be combined into larger "air strikes". Separate "air strikes" may, if desired, be combined if they originate in the same hex. Separate "air strikes" may also be combined by moving an "air strike(s)" through a hex where one or more other "air strikes" originate, and combining all into one "air strike" before moving out of that Searchboard hex.

13b) **"WAVE" ATTACK RESOLUTION:** Separate "air strikes" that have not combined and end movement in the same hex with an opposing task force marker(s) or base unit should be

kept distinct (one way to do this is to face the air units of each "wave" in different directions while they are stacked together in the Searchboard battle hex), as each separate "air strike" constitutes a different "wave" of attacking air units.

13b1) ORDER OF WAVE USE: When the time comes to resolve the battle, place each "wave" in a *separate* stack near the Battleboard. Then, the controlling player rolls a die once for each "wave". The "wave" for which the highest number was rolled must resolve combats first (the first "wave"), then the next highest, etc. If die rolls were tied, those "air strikes", by sheer luck, arrived at the same time, and are combined to form one "wave".

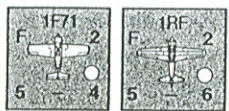
13b2) "WAVE" COMBAT RESTRICTIONS: Each "wave" is fought as a separate battle in the same battle hex against the same defending units (reduced by their losses against earlier "waves").

13b2.1) The base and/or ship units are setup (see 4a1 and 4a2) only once, for the first "wave". They are *not* rearranged between "waves", but they are used for separate anti-aircraft combats after each "wave" of enemy air units is setup.

13b2.2) As each "wave" completes its battle, its air units (including its escorting fighter units) are returned to their Searchboard's battle hex.

13b2.3) The CAP fighter units may be used for separate air combats (see option 13) against each "wave", but what they can engage in air combat may change with each "wave". Only fighter units used to combat high level or dive bomber units in the previous "wave" are considered to be from a "High CAP" box for air combats against the next "wave"—all others are considered to be from a "Low CAP" box against the next "wave".

[14] FIGHTERS AND AIR COMBATS



Fighter air units are not used in the Basic Game, so to use this option the Fighter units must be setup at the start of a game. Fighters are used as "escorts" for bombers and as "combat air patrols" ("CAP") to defend friendly targets. They are used to engage in "air combats" with other air units. Air combats are resolved *before* resolving anti-aircraft combats.

14a) AIR COMBAT SETUP: This section can be skipped if no CAP fighter units are present in the hex. If there are no CAP fighter units, any escort fighter units in the hex may be kept out of combat, or some or all may be setup to strafe (see option 14f). Battle setup is handled normally (see 4a), except that, *after* setting up the other units normally, the fighter units are setup for air combats, as follows:

14a1) ESCORT SETUP: Pick a corner or edge of the Battleboard with some empty hexes to setup an air combat between fighter units. Place all of the escorting fighter units in a line, one per hex.

14a2) CAP SETUP: All fighter units in *both* the "High CAP" and "Low CAP" boxes in the battle hex must be used in the air combat with the escort fighter units. Keep fighter units shifted from the two boxes separated, or (if necessary) make notes as to which is which.

14a2.1) To mark individual combats, place each CAP fighter unit with its front facing at one desired opposing escorting fighter unit.

14a2.2) Excess CAP fighter units must be stacked with other units, as desired, so that two or more CAP fighter units are in combat with one escort fighter unit, but, if possible, at least one CAP fighter unit must be matched up with each escort fighter unit.

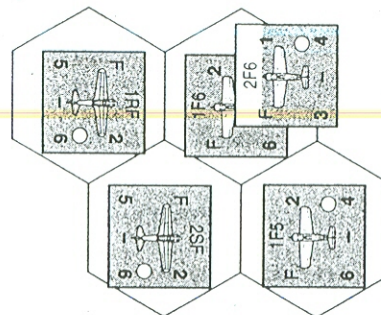
14a3) ESCORT SETUP ADJUSTMENT: If there are more escort fighter units involved, the excess units may be stacked with other escort fighter units for air combat, as desired, so that two or more escort fighter units are in combat with one CAP fighter unit, or some or all of the excess escort fighter units may be setup to strafe (see option 14f).

14b) AIR COMBAT MODIFIERS: The attacking side's only combat modifier is the attacking air unit's air combat factor. If two or more units attack the same target unit, their air combat factors *must* be added together. The defending side's only combat modifier is the target air unit's defense factor.

14c) AIR COMBAT SEQUENCE: The escort side is the attacker first. Each individual combat is resolved using the escort side's air combat factors as modifiers against the CAP side's defense factors. If the only CAP unit in an individual air combat is eliminated, any escort fighter units in that individual combat may be *immediately* placed for use as strafing fighter units (see 14f), and/or just end their participation against the current "wave", as desired. Then, in each case where the CAP unit was not eliminated, an individual combat still exists, but now

the roles change, and the CAP units attack. Now, use the CAP side's air combat factors as modifiers against the escort side's defense factors. The attacking player always decides the order in which the individual combats are resolved.

14d) AIR COMBAT EXAMPLE: Two Japanese CAP fighter units are in two individual air combats with three Allied escort fighter units, as shown:



14d1) ESCORT ATTACKS: The Allied "1F6" and "2F6" (back) escort fighter units have a total of "9" air combat factors (a "+9" combat modifier) versus "2" defense factors (a "+2" combat modifier) for the Japanese "1RF" CAP fighter unit. No other modifiers apply in air combats. The Allied player rolls a "1" ("9" total modifier) = "10" combat number, and the Japanese player rolls a "3" ("2" total modifier) = "5" combat number. The attacker's combat number is two times the defender's combat number, so the Japanese "1RF" unit is *flipped* to show its back side. The Allied "1F5" escort fighter unit has a total of "6" air combat factors (a "+6" combat modifier) versus "2" defense factors (a "+2" combat modifier) for the Japanese "2SF" CAP fighter unit. The Allied player rolls an "8" ("6" total modifier) = "14" combat number, and the Japanese player rolls a "2" ("2" total modifier) = "4" combat number. The attacker's combat number is three times (actually more) than the defender's combat number, so the Japanese "2SF" unit is eliminated. The elimination of the Japanese CAP fighter unit frees the "1F5" fighter unit to be immediately placed as a strafing fighter unit, if desired (see option 14f).

14d2) CAP ATTACKS: Now the CAP side attacks, but only the "1RF" unit remains to do so, and with its back side air combat factor at that, so the "1F5" unit is no longer involved in an individual combat, and is not attacked. "1F6" and "2F6" are still in an individual combat, and the Japanese player decides to attack the "2F6" unit, as its weakened back side is up. The Japanese "1RF" CAP fighter unit has a total of "3" air combat factors (a "+3" combat modifier) versus "1" defense factors (a "+1" combat modifier) for the Allied "2F6" escort fighter unit. The Japanese player rolls a "7" ("3" total modifier) = "10" combat number, and the Allied player rolls a "4" ("1" total modifier) = "5" combat number. The attacker's combat number is two times the defender's combat number, so the Allied "2F6" unit is *flipped*. As its back side is already up, the unit is eliminated.

14e) AIR COMBAT BREAKTHROUGHS: Any individual air combat that ends with the elimination of the only escort fighter unit in the individual combat, releases the CAP fighter unit(s) engaged in that individual combat to "breakthrough" and have an *additional* air combat with an enemy bomber or strafing fighter (see 14f, below) unit. If there are no escort fighter units, consider that *all* CAP fighter units were able to breakthrough.

14e1) The CAP player places, as desired, the breakthrough fighter units facing enemy air units (which are already setup to attack base and/or ship units) they will combat, thus establishing the individual air combat participants. **EXCEPTION:** A breakthrough fighter unit that came from a "Low CAP" box may *only* engage in air combat with a strafing fighter unit or a bomber unit using torpedo or medium level category bombing, while one that came from a "High CAP" box may engage *any* desired enemy strafing fighter or bomber unit on the Battleboard.

14e2) If breakthrough CAP fighter units are stacked and facing a stack of enemy air units, they may combine air combat factors to attack one enemy unit, or be used for separate air combat attacks, as the attacking player wishes. It is not necessary to attack all units in an opposing stack in these combats, but, if possible, all strafing escort fighter units in a stack that is involved must be attacked. *All* opposing bomber and/or strafing fighter units in a stack may be used to attack in their turn, even if all were not actually attacked by the CAP fighter units.

14e3) In these breakthrough air combats, the breakthrough CAP fighter units always attack first, then the surviving enemy unit(s) that they face may attack for air combat. The CAP player is allowed to decline to commit any or all of the breakthrough CAP fighter units to do this.

14f) STRAFING BY ESCORT FIGHTER UNITS: Excess escort fighter units that are setup to strafe (see 14a and 14c) are placed on the Battleboard facing and adjacent to enemy ship units, the same as if they were torpedo bomber units. They may be stacked with (and, if so, must be faced in the same direction as) a torpedo bomber unit(s). The effect of strafing is that, during anti-aircraft combat, a "1" combat modifier applies to attacks by a ship unit that is faced by one or more strafing fighter units.

14g) AIR COMBAT BATTLE'S END: When all combat has been resolved, return the escort units to the battle hex on their Searchboard. CAP fighter units are shifted to their appropriate Operations Card CAP box (this may also be done temporarily between "waves"; see 13b2.3), as follows:

14g1) All air units that were in a "Low CAP" box before the battle are returned to the "Low CAP" box.

14g2) All other air units that engaged in a breakthrough air combat with an enemy air unit using the categories of torpedo or medium level bombing or a strafing fighter unit are returned to the "Low CAP" box.

14g3) All air units that were in a "High CAP" box before the battle are returned to the "High CAP" box, unless 14g2 applies.

[15] EXPANDED SEARCH RULES

15a) VARIABLE SPOTTING INFORMATION: Air search information is changed, with this option replacing Basic Game rule 3d3.2. For easy reference, much of this information is repeated in the SEARCH CHART on the Searchboard Screen.

15a1) AIR SEARCH PROCEDURE: If there is nothing in an announced hex, the opposing player says so. If a task force marker(s) is in a hex called out to be searched, it is spotted, but the opposing player merely states that "something is there". To try for more exact information, competitive die rolls are used, with both players rolling a die and comparing the results, as follows:

15a1.1) Search Modifiers: All of the following "search modifiers" apply to the searching side's die roll:

+0: This modifier applies during a night Turn.

+3: This modifier applies during a day Turn.

+2: If the air unit has not used all of its movement factors, the searching player may announce that additional movement factors will be expended in the hex (as the search aircraft circles the area trying for a better look). Each additional movement factor expended adds a "+2" die roll modifier. *For example, a scout air unit with "6" movement factors enters a hex containing an opposing task force marker after moving only three hexes. The remaining three movement factor could be converted into a "+6" modifier, or, if the player still wished to move the scout unit another hex, two of movement factors could be converted into a "+4" modifier, and the air unit moved into another hex when the search in the current hex is over, etc.* (This modifier applies only to air searches.)

+3: This modifier applies if the hex contains any land or reef.

+6: This modifier applies if the hex contains a base unit.

15a1.2 Search Results: Compare the modified numbers rolled to find the result, as follows:

Tie or Less: If the searching side's modified roll is equal to or lower than the opposing roll, there is still just "something is there".

Exceeded: If the searching side's modified roll exceeds the opposing roll, but is not at least two times the opposing roll, the opposing player must provide a number of ships in the hex. However, the ship unit's player may lie about the real numbers of ships present - the player may say any number from half (round up) to double the actual number of ships.

2X: If the searching side's modified roll is at least two times the opposing roll, but is not at least three times the opposing roll, the opposing player must tell the "actual number" of ships and task force markers in the hex.

3X: If the searching side's modified roll is at least three times the opposing roll, the opposing player must announce exactly which ship units are present; i.e., the "exact" information, as in the Basic Game.

SPECIAL NOTE: When determining the number of ships in a hex, remember that transport ("AP"), fast transport ("APD") and destroyer ("DD") ship units represent more than one actual ship—they represent a number of ships equal to the number of ship symbols on their counters. For example, the Japanese destroyer ship unit eleven represents six actual ships when its front side is up, and three actual ships when its back side is up. This number of "ships"—not necessarily the number of "ship units"—provides the numbers for the "Exceeded" and "2X" results.

15a2) AIR STRIKE SPOTTING: An air strike(s) may be moved to end movement and attack in a hex where exact information is not available. In this case, exact information on the ship units is given, but only when they are setup for the battle. In other hexes that an air strike enters, handle as in 15a1.

15a3) OPTIONAL SEA SEARCH: This is performed as in Basic Game rule 3d5, except that the procedures in option 15a1 for determining what information is available are used. See also option 16a for surface contacts with opposing ship units.

15a4) MARKING AND RECORDING SPOTTINGS: The enemy task force markers are, as in the Basic Game (see 3d3.3), used to mark enemy positions. For use with this option, it is suggested that the "Exact" side of an enemy task force marker be displayed only when the information is reliable ("2X" and "3X"), and that the "?" side be displayed otherwise. Of course, written notes are still useful for recording what is known about each enemy task force marker.

15b) LOSS OF SCOUT AIR UNITS: This option is only used if option 14 is also used. Anytime a scout air unit enters a hex containing an enemy fighter CAP ("High CAP" and/or "Low CAP"), there is a chance that the scout unit will be eliminated by the opposing fighters.

15b1) When a scout air unit(s) enters a hex containing an opposing fighter unit(s) in a CAP box(es) or was used to "shadow" (see option 12d2) a task force marker where this applies, both sides immediately make an unmodified die roll and compare the results. If the fighter CAP side's roll exceeds the scout side's roll by three times or more, the scout air unit(s) is eliminated. Otherwise, there is no result.

15b2) If eliminated, a scout air unit is still considered to search a hex before elimination, and the search is conducted as in option 15a1, but no search modifier for expending additional movement factors in the hex is applied to the searching.

15c) CREATING NEW SCOUT AIR UNITS: Scout air units represent small detachments of two to four aircraft that are actually detached from larger combat air units. Use of this rule is the only way some scout air units can be used in a game.

15c1) Scout air units may be created at the start of an Assembly Step by marking a "parent unit", that is, an undamaged combat air unit that shows its front side, with a 1 hit or a 2 hits marker to show the reduction of its strength. This creates, respectively, one or two new scout air units which are placed in the same Operations Card box as the "parent unit". Be careful that creating these scout air units does not exceed capacity. Only available (i.e., those included in the game and not currently in use—whether never used or eliminated earlier) scout air units may be created. If option 11d is also used, make a written record of these parent units, as they can not be "repaired".

15c2) The scout air units must be of the same type as their "parent unit". This means that only the following types of combat air units may be used to create the following specific scout air units:

ALLIED SCOUT UNITS: The pictures match those on their "parent units".

"H": "H" class units may be used to create scouts "XX", "YY" and "ZZ".

"D": Carrier based (white basing color) "D" class units may be used to create scouts "RR", "SS" and "TT".

"I": Land based (green basing color) "I" class units may be used to create scout "QQ".

"T": Carrier based (white basing color) "T" class units may be used to create scouts "UU", "VV" and "WW".

JAPANESE SCOUT UNITS: The pictures match those on their "parent units".

"D": Carrier based (white basing color) "D" class units may be used to create scouts "AA", "BB", "CC" and "DD".

"T": Carrier based (white basing color) "T" class units may be used to create scouts "EE", "FF", "GG", and "HH".

"T": Land based (green basing color) "T" class units may be used to create scouts "SS" and "TT".

[16] SURFACE COMBATS

Surface combats are almost a separate game, and, in fact there are scenarios (7f and 7g) that are exclusively surface combats. There is a great deal of abstraction in these surface rules to make these actions fit on the Battleboard, and they admittedly use a "split scale" where ships are deployed as if the hexes were under one thousand yards across, and their weapon ranges work as if each hex were 5,000 to 7,000 yards across, but the rules still provide a decent "feel" for 1942 surface actions. These rules are used to resolve surface combats between opposing ship units and between ship units and base units. Surface combats are resolved after all bombing combats are completed.

16a) SURFACE CONTACT: The Searchboard hexes are large enough (over 70 miles across) that it is possible for ships from both sides to be located in the same hex and still not "spot" each other or get close enough to fire their guns. "Surface contact" is required to fight a surface combat. Surface contact occurs, and a surface combat *must* be resolved, if both sides have a task force marker(s) in the same hex *and* both sides had search results in that hex of "2X" ("actual number") and/or "3X" ("exact"; see option 15a1.2), or (if option 15a is not used) the normal Basic Game "exact" information (see 3d3.2). If only *one* side has this information, that side's player decides if there is to be a surface contact or not, and a surface combat is resolved *only* if that player wishes to do so—otherwise, there is no surface contact and there will be no surface combat. If there is a surface contact, exact information on the ship units present is given to both sides when they are setup for battle.

16b) TASK FORCE FACING: If this option is used, it is necessary to know exactly what direction a task force marker was moving when it entered a battle hex.

16b1) MOVEMENT DIRECTION: The direction is easily shown by designating the top of task force markers as their "front" facings (see picture). Then, when a task force marker is moved during a Sea Movement Step, always orient its front facing to show the direction it moved when it entered the hex.

TASK FORCE MARKER'S FRONT FACING



TASK FORCE MARKER ENTERED INTO HEX

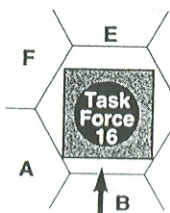


16b2) DIRECTION COMPARISONS: The directions the opposing task forces moved are used to determine the directions the ship units face when setup on the Battleboard.

16b2.1) If opposing task force markers entered a battle hex and crossed the same or adjacent hexsides to enter the hex, all ship units are setup facing in the same direction.

16b2.2) If opposing task force markers entered a battle hex and crossed opposite or non-adjacent hexsides to enter the hex, the ship units are setup facing in opposite directions.

16b2.3) If there are multiple task force markers on one or both sides, and, because of this, both 16b2.1 and 16b2.2 apply to some task force markers, all ship units are setup facing in the same direction.



16b2.4) In the example at left, the Task Force 16 marker entered the battle hex as shown by the arrow. If all enemy task force markers entered the hex from directions A, B, and/or C, opposing ship units are setup facing in the same direction (16b2.1 applies). If all enemy task force markers entered the hex from directions D, E, and/or F, opposing ship units are setup facing in opposite directions (16b2.2 applies). If one enemy task force unit entered from direction A and another from direction F, then 16b2.3 applies, and opposing ship units are setup facing in the same direction.

16c) SURFACE COMBAT SETUP: Ship units are removed from their task force's "Ships" boxes on the Operations Card. If ship units were earlier setup for anti-aircraft and bombing combats, they must be removed from the Battleboard and placed in new locations. Side B sets up all Side B ship units, then Side A sets up all Side A ship units. These ship units may be setup as desired on the Battleboard, even if they were in separate task forces, as long as all units fit on the Battleboard, there is only one unit per hex, and their setup conforms to all the following rules:

16c1) SETUP LINES: If the combat occurs during a night Turn, opposing ship units in their first battlelines are setup behind and right on the opposing "Night Setup Lines", separated by the two open hexes between. If the combat occurs during a day Turn, opposing ship units in their first battlelines are setup behind and right on the opposing "Day Setup Lines", separated by the four open hexes between. The lead ship unit for each side's first battleline is placed in an "X" hex ("H11" or "L11" for night Turns and "H11" or "M11" for day Turns). Since Side B sets up first, that player selects the setup line for his side, and Side A uses the other setup line.

16c2) BATTLELINES: Ship units must be setup in "battlelines" where one ship unit is placed directly behind (in an adjacent hex) the ship to its front and facing in the same direction as the lead ship unit (the one placed in the "X" hex in a first battleline.).

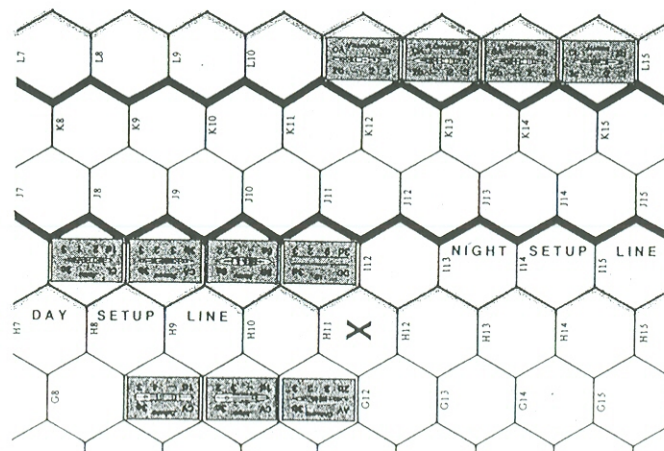
16c2.1) Opposing ships are all placed facing in the same, or opposite, directions (as determined by rule 16b). All ship units on a side must be setup facing in the same direction, even if in different battlelines.

16c2.2) The maximum length of an individual battleline is limited by the number of hexes to the edge of the Battleboard.

16c2.3) If there are five or less ship units on a side, all *must* be placed in the "first" battleline, the one placed right on the appropriate setup line with its lead ship in the "X" hex. As many as three *additional* battlelines may be placed, each two hexes back (i.e., there is an empty hex row between the battlelines, and succeeding ones must be further from the enemy ships) from the previous one, as long as each battleline has at least three ship units, and the total number of battlelines on a side does not exceed four. The lead ship unit in each battleline must be placed even with the lead ship (the one in the "X" hex) in the first battleline. For example, if the lead ship in the first battleline is in "X" hex "M11", the lead ship in a second battleline must be in hex "O11", the lead ship in a third battleline must be in "Q11", etc.

16c2.4) Ship units that are "dead in the water" (see option 11c) must be placed at the back(s) of a battleline(s), behind any ship unit(s) that are able to move.

16c3) SAMPLE SURFACE COMBAT SETUP: This is during a night Turn where opposing ships must be setup facing in opposite directions. The Allied side has only four ship units, so all must be in the first battleline. The Japanese side has seven ship units, which could all be placed in the first battleline, but the Japanese player decided to give the aircraft carriers a measure of protection by placing them further back in the second battleline.



16d) SEQUENCE OF SURFACE TURNS: Once setup is complete, a surface combat is ready to begin. Place the Surface Turn markers to point to Surface Turn "1" on the SURFACE TURN RECORD TRACKS on the Battleboard. Surface combats consist of up to ten "Surface Turns", and the sequence of play for each Surface Turn is as follows:

16d1) SURFACE COMBAT SIDES: Roll one die each and compare the results. Roll again to break ties. The high roll side is Surface Side A for this Surface Turn and the low roll side is Surface Side B. Both sides should adjust their Surface Turn marker to show its appropriate side.

16d2) SURFACE MOVEMENT: The Surface Side B ship units are moved, then the Surface Side A ship units.

16d3) INDICATE TORPEDO FIRE: Any Surface Side B torpedo markers are placed, then any Surface Side A torpedo markers.

16d4) GUNNERY COMBATS: Resolve all Surface Side B gunnery attack combats, then all Surface Side A gunnery attack combats.

16d5) TORPEDO COMBATS: Resolve all Surface Side B torpedo attack combats, then all Surface Side A torpedo attack combats.

16d6) BREAKOFFS: Surface Side B designates any breakoff ship units, then Surface Side A does so. Then Surface Side B resolves his attempts, followed by the resolution of the Surface Side A attempts.

16d7) END TURN: Advance the Surface Turn markers to point to the next Surface Turn. If there are no ship units left on the Battleboard from one side (see option 11c1 for the automatic elimination of "dead in the water" ship units), or if Surface Turn "10" is completed, the battle's end procedure (see Basic Game rule 4e) is followed to return all units to the Searchboards, including those that made successful breakoffs.

NOTE: 16d1 and 16d7 are self-explanatory, so only the other portions of a Surface Turn are explained in detail, below.

16e) SURFACE MOVEMENT: A player may move a ship unit to expend all of its movement factors or less (even not moving, if desired) for movement on the Battleboard.

16e1) It costs one movement factor to enter a new hex, and a ship unit may only be moved forward; i.e., into the hex to which its front facing points.

16e2) It also costs one movement factor to "turn" (change its front facing) a ship unit one hexside. A ship unit may be turned within a hex up to as many hexsides as it has movement factors.

16e3) A ship unit may move through a friendly or opposing ship unit while being moved, but may never end movement in the same hex as any other ship unit.

16e4) No units may exit the Battleboard during a surface combat, except through breakoffs or after the end of the tenth Surface Turn. If necessary, shift all units the same number of hexes in the same direction to maintain their relative positions and avoid the edges of the Battleboard. If this proves impossible, then players are forbidden to move their ship units in a way that would cause them to exit the Battleboard.

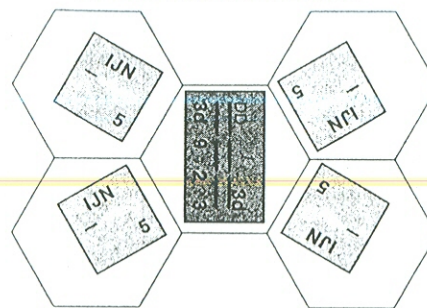
16f) INDICATE SURFACE TORPEDO FIRING: Ship torpedoes take a while to reach their target, so they are "fired" before the gunnery combats are resolved, but not resolved until after the gunnery combat is completed. Only ships with torpedo factors may be used to fire torpedoes at enemy ship units (they may not be fired at a base unit).

FRONT FACING 16f1) To indicate that a ship has fired its torpedoes, a torpedo marker is placed in a hex beside the firing ship, with the torpedo marker's front facing (as shown above) pointing at the enemy target ship.



16f2) Japanese torpedoes have a maximum range of five hexes and Allied torpedoes have a maximum range of two hexes. This range is measured from the firing ship unit. The torpedo markers show the nationality and range numbers on the two sides of the counters, so have the appropriate side facing up when a torpedo marker is placed on the Battleboard.

**TORPEDO MARKERS MUST BE FACED AS SHOWN
IN THE FOUR POSSIBLE HEXES.**



16f3) A ship is not always in a good *location* from which to fire its torpedoes. Torpedoes may not be fired if there is no target unit in range or in a position to be hit. A torpedo unit may not be placed in a hex with a ship unit (NOTE: This means that Allied torpedoes can never be launched at half range), or placed so that it points in a direction where a friendly unit is closer than an enemy unit. A torpedo marker is placed to the side of its firing ship unit, and (depending into which of the four hexes it is placed) may only be faced in one direction, as shown in the illustration at left.

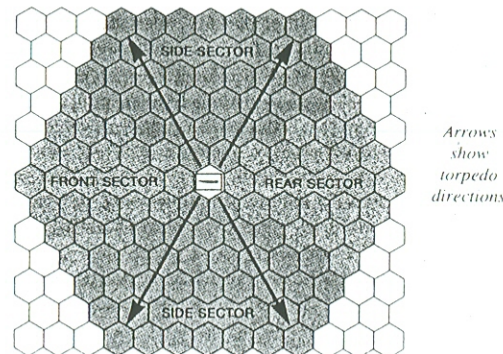
16f4) A ship unit may fire torpedoes only once per surface combat and once per game. If necessary, to aid memories, keep a written note of which ship units have fired their torpedoes.

16f5) Consider this rule as optional even if the rest of the surface combat rules are used, as it contradicts 16f4 as far as the Japanese are concerned. Japanese ships carried complete torpedo "reloads". If a Japanese ship unit fires its torpedoes during a surface combat, it can be used to fire them again during a later surface combat. If this rule is used, written records must be kept.

16g) GUNNERY COMBATS: In gunnery combats, a single ship unit is always used to attack a single enemy target ship unit. The attacks may be in any desired order—there is no need to announce all firings before any are resolved. If desired, a player can fire a ship unit at a target unit, then decide to fire another ship unit at that same target unit, etc. There is no "line of sight" for gunnery combats—a ship unit's range may be counted through hexes containing a ship unit(s) and/or torpedo marker(s) (from either or both sides). A gunnery combat attack uses a ship unit's current surface factor number as a modifier against a target unit's current defense factor number as the defender's modifier. Other attacker combat modifiers that may apply are explained below (for easy reference these are also found in the COMBAT DIE ROLL MODIFIERS CHART on the Battleboard).

16g1) GUNNERY RANGE AND HALF RANGE: A "+2" modifier applies if a target unit is at "half range" from the attacking ship unit. The range of a ship unit's gunnery depends on the size of its guns, as reflected by the letter "range" that is part of a ship unit's surface factor. The ranges for these ratings are "a" (battleship guns of 14" to 18") = 6 hexes (3 hexes = half range), "b" (8" heavy cruiser guns) = 5 hexes (2 hexes = half range), "c" (6" light cruiser guns) = 4 hexes (2 hexes = half range), and "d" (3" to 5.5" light guns) = 3 hexes (1 hex = half range). For easy reference, these ranges are also printed on the Battleboard.

16g2) GUN SECTORS: A "-2" modifier applies if a target unit falls into an attacking ship unit's front or rear sector. All ship units have a front sector, a rear sector, and side sectors on each side. This modifier reflects how these ships were designed—a ship is considered to be able to fire all of its big guns into a side sector, while the aft gun turrets are useless against a target in its front sector, and forward gun turrets are useless against a target in its rear sector. The hexes that fall into a ship unit's sectors, depending on the ship unit's facing, are shown in the following diagram (also repeated for reference on the Battleboard):



Arrows
show
torpedo
directions

16g3) SURFACE VERSUS DEFENSE FACTOR RATINGS: The bigger ships had thicker armor that gave more protection against smaller guns. As part of their defense factor, all ship units have a letter rating that reflects the thickness of their armor, the same as the letter rating with the surface factor reflects the size of its guns. These modifiers are as follows:

16g3.1) A “-6” modifier applies if an attacking unit has a “d” rated surface factor and the target unit has an “a” rated defense factor.

16g3.2) A “-4” modifier applies if an attacking unit has a “d” rated surface factor and the target unit has a “b” rated defense factor, or if an attacking unit has a “c” rated surface factor and the target unit has an “a” rated defense factor.

16g3.3) A “-2” modifier applies if an attacking unit has a “d” rated surface factor and the target unit has a “c” rated defense factor, if an attacking unit has a “c” rated surface factor and the target unit has a “b” rated defense factor, or if an attacking unit has a “b” rated surface factor and the target unit has an “a” rated defense factor.

16h) TORPEDO COMBATS: If the ship unit that fired a torpedo marker has been eliminated or if no target unit lies in its path, *immediately* remove the torpedo marker—it automatically “missed” *everything*. Remove other torpedo markers as their torpedo combat attacks are resolved.

16h1) TORPEDO COMBAT MODIFIERS: For the torpedo markers that are not removed as automatic misses, a torpedo combat attack uses an attacking ship unit’s current torpedo factor number as a modifier against a target unit’s current defense factor number as the defender’s modifier. If two or more torpedo markers indicate attacks against the same target unit, their ships’ torpedo factors are added together as a single combat modifier for *one* torpedo combat. Other combat modifiers that may apply are explained below (for easy reference these are also found in the COMBAT DIE ROLL MODIFIERS CHART on the Battleboard):

16h1.1) Night: A “+2” modifier applies if the surface combat occurs during a night Turn. This reflects that incoming torpedoes are harder to see at night.

16h1.2) Target Situation: A “+3” modifier applies if two or more torpedo markers are aimed at *both* sides of a target ship unit’s front facing (an “anvil” attack, similar to Basic Game rule 4d3.1). A “-2” modifier applies if any or all of the torpedo markers face a target ship unit’s front or rear facing (the ship is “threading” the torpedoes, similar to Basic Game rule 4d3.2).

16h1.3) Half Range: A “+2” modifier applies if a target unit is at “half range” from the attacking ship unit. The range and half range of a ship unit’s torpedoes depends on the ship’s nationality, as follows: Japanese torpedo markers have a range of 5 hexes from the attacking ship unit and a 2 hexes half range. Allied torpedo markers have a range of 2 hexes from the attacking ship unit and a 1 hex half range. For easy reference, these ranges are also printed on the Battleboard.

16h2) TORPEDO “MISSES”: Except for misses defined to miss everything (see 16h1), there is a chance that a torpedo combat that “misses” (ie., causes no damage to) a target ship unit may still hit another one if that ship unit is still within range and lies on the same straight route from the firing ship unit. Basically, a torpedo combat that fails to cause damage is still active and may hit the very *next* ship unit in line (even if it is a *friendly* ship, in which case the attacking player rolls *both dice*), then (if that “misses”) the next in line after that, etc., until the range limit is reached or a ship unit is damaged.

16i) BREAKOFF ATTEMPTS: Either or both sides may attempt one or more “breakoffs” during the same Surface Turn. A breakoff is an attempt to disengage ship units, and represents slipping into a fogbank, laying smoke, etc.

16i1) BREAKOFF GROUPS: A single ship unit with at least one empty hex all around it constitutes a “group” for these rules. Also, two or more ship units that all are each located in an adjacent hex to at least one other ship unit forming an *unbroken* chain of units constitutes a “group” for this rule. A breakoff attempt may not be made for a group containing a “dead in the water” ship(s). For breakoff attempts, a “group” may not be divided—a player may not choose a ship unit(s) for a breakoff attempt, while choosing not to attempt a breakoff with another ship unit(s) of that same group.

16i2) BREAKOFF PROCEDURE: Surface Side B designates any desired Surface Side B “group(s)”, followed by Surface Side A doing the same for his “group(s)”. One breakout attempt per group per Surface Turn is allowed. Then, in the same order, each announced breakoff attempt *must* be resolved.

16i2.1) To resolve a breakoff attempt, both sides roll one die and their modified rolls are compared. All modifiers apply to the side attempting to breakoff, as follows (these are also printed in the SURFACE TURN RECORD TRACK on the Battleboard for easy reference):

- A “-5” modifier applies if the surface combat occurs during a night Turn.
- A “-7” modifier applies if the surface combat occurs during a day Turn.
- A “+1” modifier applies for *each* Surface Turn completed (ie., each Turn prior to the current one).

16i2.2) If the modified number rolled by the side attempting the breakoff exceeds the number rolled by the opponent, the breakoff attempt succeeds, and all ship units of the designated group are removed from the Battleboard (they have successfully disengaged), and take no further part in the surface combat. Otherwise, the attempt fails.

16j) BOMBARDING A BASE: Surface combat with a base unit (called “bombardment”) is resolved *separately* and *after* a surface combat with any enemy ship unit(s) that may be in the same Searchboard hex. In such a case, the side desiring to bombard a base unit must *eliminate* and/or force a breakoff by *all* enemy ship units involved before having a surface combat with the base unit; failure to do so means that the side desiring to bombard may *not* have surface combat with the base unit that Turn. Only ship units that did not breakoff may be used for bombardment following a surface combat with enemy ship units. If no enemy ship unit(s) is present, surface combat moves immediately to involve the base unit. Surface combat with a base unit is resolved as follows:

16j1) Place the base unit from its side’s Searchboard near the center of the Battleboard.

16j2) Divide the enemy ship units into stacks according to the letter ratings of their surface factors. Place each stack at a range equal to the maximum range of its surface factor letter rating. Place ship units with a “-” surface factor at a seven-hex range from the base unit.

16j3) The base unit (which can fire in every direction equally; ignore front or rear sector modifiers) may then use its surface factor (if any) against any one ship unit within range as determined by the letter rating of its surface factor. Handle the same as when one ship uses gunnery combat to attack another, using all applicable modifiers.

16j4) Then, in any desired order, use the ship units’ surface factors to attack the **base unit** once with each stack of ship units, combining all the surface factors in each stack as **one** modifier, but otherwise handling the same as when one ship unit uses gunnery combat to attack another, using all applicable modifiers. *For example, if the only “b” rated ship units are “Atago” and “Chokai” (both undamaged), this gives a “+3” combat modifier for each ship unit’s surface factor for a total of “+6” and a “-2” combat modifier for “b” rated guns versus an “a” rated defense factor for a total modifier for the attacker of “+4”.*

16k) FIRST SURFACE TURN NIGHT “SURPRISE”: Consider this rule section as optional, even if the rest of the surface combat rules are used, as it adds a “luck” factor that, although realistic, can change the balance of surface combats unpredictably.

16k1) DETERMINING “SURPRISE”: When rolling to determine Sides at the start of the first Surface Turn during a *night* Turn, if one side’s roll is at least two times more than the other side’s roll, it is assumed that the higher number side has not only become Surface Side A, but has achieved “surprise”. The “surprise” rules simulate the effects as if Surface Side A has “seen” Surface Side B’s ship units, but Surface Side B has not yet “seen” Surface Side A’s ship units.

16k2) EFFECTS OF “SURPRISE”:

16k2.1) NORMAL “SURPRISE” EFFECT: Side B ship units (except for “dead in the water” units, which don’t move at all) must all be moved one hex straight ahead during this Surface Turn. Side A ship units can be moved normally. *Only* Side A can indicate torpedo firing during this Surface Turn. Side B cannot indicate torpedo fire during this Surface Turn. Side A resolves its gunnery combat attacks *first*. Capabilities and sequence return to normal after this Surface Turn.

16k2.2) DELAYED “SURPRISE” EFFECT: Alternately, the Surface Side A player may wish not to use torpedoes or guns during a “surprise” Surface Turn. If this wish *not* to have combat is announced, Surface Side B *must* be moved one hex as in 16k2.1, and Surface Side A is moved normally, but *neither* side uses torpedoes or gunnery. At the start of the next Surface Turn, when rolling for Sides, if Side A remains the same side (simply rolling higher now is enough, there is no need for two times the other side’s roll), the “surprise”

remains intact—Surface Side A may choose to apply 16k2.1, or may choose to repeat 16k2.2, etc. However, if the other side rolls higher and becomes Surface Side A, the “surprise” has been lost, and that Surface Turn and all later ones are resolved normally.

16k3) NIGHT FIGHTING ADVANTAGES: In 1942, much to the surprise of the Allies, the Japanese navy was much better trained and equipped for night sea battles. To counter this advantage, the Allies had more and better radar sets, but Allied admirals were very mixed as to their understanding of and ability to use the new technology. As a result, the side with the advantages in a night battle varied. To reflect these advantages, whenever rolling to determine Sides at the start of every Surface Turn when “surprise” is still possible (this does not apply at the start of Surface Turns when “surprise” is not possible), a “night fighting modifier” applies to the Japanese side’s roll. This modifier varies and is given in the special rules section of each scenario.

[17] MULTI-PLAYER RULES

GUADALCANAL can be played by more than one player per side. These are some suggested rules for use in games with up to two players per side. Games with the largest forces available work best, so it is suggested that only scenarios 7c, 7d, and 7e be used for multi-player games.

17a) ASSIGNMENT OF PLAYERS: Players should be given specific units to command. For the example, one player could get the command of all ship and ship-carried air units, and the other player could get command of the bases and all land-based air unit. Alternately, one player could command the east half of the Searchboard, while another player commands the west half.

17b) UNIT CONTROL: Players may only control the units that they command. This means that only that player moves and rolls the dice for those units.

17c) COMMUNICATIONS BETWEEN PLAYERS: Communications are considered to be by “radio”, even when player flagships are in the same Searchboard hex. However, since fleets tried to observe “radio silence”, and since transmissions could be unreliable or garbled, communications were often difficult and delayed. These rules duplicate the problems of conducting and controlling a World War II naval campaign through radio communications:

17c1) The commanders on a side should meet secretly to discuss their strategy before a game begins. One player should be nominated as the overall commander; i.e., the guy who gives the orders. After the game begins, no talking is allowed among the players on a side.

17c2) Each player names one ship as the “flagship” for his forces. This ship is known to the commander’s side, but not to the opposing side. Flagships should always be aircraft carriers or battleships, if possible. If a player’s flagship is eliminated, that player may not send or receive messages for the rest of the game.

17c3) To simulate radio messages, write and send notes on slips of paper at the start of a Turn’s Assembly Step. Fold the message and write on the outside the current Turn and the name of addressee. Then competitively roll a die against an opposing player, with no modifiers. If the player sending the message rolls equal to or higher than the opposing player, the message will be given to the addressee at the start of the *next* Turn’s Assembly Step. If the player sending the message rolls less than the opposing player, the message will be given to the addressee at the start of the Turn’s Assembly Step in *two* Turns. Write the Turn of delivery on the note and place in a pile (sorted by delivery Turns) with all the other messages awaiting delivery.

17c4) Sending a message reveals the location of the player’s flagship immediately (announce the hex identification to the opposing side).

[18] UMPIRED GAMES

This option presumes that an extra person can be recruited who will not play for either side, but will instead serve as an “umpire” and run the game. This situation allows for far more realism and is actually the *ultimate* version of the game. The rules given in this option are less hard-and-fast rules than suggestions on how the use of an umpire can benefit the game by increasing the “fog of war”.

18a) SPECIAL SETUP: The players (or teams of players) must be separated into separate rooms, or at least kept out of sight behind partitions. Each side or player must have a copy of

the game, and the umpire must have another copy. This option works well when all participants are at their homes, and the game is played by phone—in multi-player games of this sort it is not even necessary for the players to have ever met.

18b) GAME COPIES: The umpire’s copy displays all information and counters for both sides. The other copies each display only one player’s (or side’s) counters and information.


18c) HINTS ON PROCEDURE: The game is played similarly to the normal version, except that all information must go through the umpire, who also handles other duties. Because the players are separated, they do *not* see each other’s Operations Cards, and it is possible to speed up play by using the following suggestions for play:

18c1) The umpire rolls two dice at the start of every Turn to determine Sides A and B. The players on both sides should then perform all other activities in the Action Phase *simultaneously*, except for moving air strikes, then notify the umpire of everything that has been done, including the projected routes of the scout air units. The umpire then takes this information and gets back to the players when their scout air units enter a hex with a task force marker(s). The players can then choose how many movement factors to expend in a hex (if option 15a1 is used), the umpire performs the competing die rolls and reports the appropriate information to the side (spotting reports go to *all* players on a side in multi-player games). **HINT:** If the result is a “lie”, the umpire should secretly roll one die: 1 through 3 = halve the actual number; 4 through 7 = give the actual number; or 8 through 10 = double the actual number. After the movement of all scout air units is completed, players must move all of their air strikes and announce any sea searches, getting any additional information from the umpire.

18c2) Each combat will have to be setup separately, with consultations as to what the involved players wish to do. Surface combats (if option 16 is used) are the most complicated as consultations must be made several times for each Surface Turn. The big difference, and what adds the “fog of war” is that the umpire handles *all* dice rolls. Players are informed as to the damage to their own units, but have a less than perfect picture as to what they are doing to the enemy. Again, as with “lies” about “spotting”, an umpire may wish to use a secret die roll to determine what information is given to a player or side regarding damage done to enemy units: 1 or 2 = underreport damage by a factor of two hits; 3 or 4 = underreport damage by a factor of one hit; 5 or 6 = report the actual damage; 7 or 8 = overreport damage by a factor of one hit; and 9 or 10 = overreport damage by a factor of two hits. Consider a “flip” to equal three hits and an “eliminated” to equal six hits for this purpose, although no impossible scores should be reported (i.e., one hit is scored on a unit that already has one hit marked, and the die roll requires overreporting by a factor of two hits, which would equal total damage of four hits, which equals a “flip” plus one hit—in a case like this, just report that the unit is “flipped”).

18c3) Players can handle their Air Return and Turn Record Phases simultaneously, and report the results to the umpire.

18d) OTHER IDEAS: As anyone who has ever umpired a game knows, there are many other ideas that can be used by a knowledgeable umpire to increase player interest and game realism. These ideas must be left to the individual umpires, as, if all were given here, the players could read them and would not be surprised. *Good gaming!*



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OTHER SOURCES

World War II, the Pacific War, and the Guadalcanal Campaign are all important events in recent history. The available reference material is very extensive. This short and admittedly incomplete list provides a starting point for those wishing to look into these subjects in more depth.

BOOKS—OVERALL TREATMENTS: These titles, among many other available texts, cover the Second World War as a whole.

World War II from Time-Life Books: This multi-volume series has very readable and informative texts and numerous excellent photographs, maps and illustrations. Each individual book covers one particular aspect of the war, and several cover World War II in the Pacific. For just one example, the **Island Fighting** volume by Rafael Steinberg covers the Allied offensives in the Pacific, starting with the Guadalcanal campaign.

BOOKS—THE WAR IN THE PACIFIC: These titles cover the overall campaigns of the "Western Allies" (principally Australia, China, Great Britain, New Zealand, and United States) in Eastern Asia and the Pacific Ocean.

Admiral Halsey's Story by W. F. Halsey and J. Bryan III, and Nimitz by E. B. Potter: These are two interesting biographies by two of the top United States leaders in the Pacific War.

History of United States Naval Operations in World War II by Samuel Eliot Morison: This 14 volume set, now somewhat dated, is still one of the best accounts of the Pacific War in print.

Japanese Warships of World War II by A. J. Watts, and U. S. Warships of World War II by Paul H. Silverstone: There are dozens of books of this type, covering all the major navies of the war. Pictures, data and text cover all of the warships and support vessels used by the various navies.

THE GUADALCANAL CAMPAIGN: These titles cover the events that are the direct subject of this game.

The Battle For Guadalcanal by Samuel B. Griffith. A very interesting account of the campaign by a USMC participant.

The Campaign For Guadalcanal by Jack Coggins. An excellent, profusely illustrated account.

Guadalcanal by Richard B. Frank. An very detailed, but still readable, and dramatic chronicle of the Guadalcanal campaign. Recently (1990) published, this work makes use of many previously unavailable sources.

MAGAZINES: All cover a wide variety of topics. Magazines such as these are especially well-illustrated with numerous photographs, maps and drawings.

World War II, Empire Press, 602 S. King Street, Suite 300, Leesburg, VA 22075: This magazine devotes its full coverage to the Second World War.

MHO: The Quarterly Journal of Military History, 29 West 38th Street, New York, NY 10018: This extremely well-written magazine covers military history through the ages, but there is always at least one article on the Second World War.

MOVIES: These are a number of movies on the topic.

The Flying Leathernecks: 1951. John Wayne, Robert Ryan. The first part of this movie is concerned with the Marine fighter pilots on Guadalcanal.

The Gallant Hours: 1960. James Cagney. A film biography of Admiral "Bull" Halsey's command style during the Guadalcanal campaign.

Guadalcanal Diary: 1943. William Bendix, Lloyd Nolan, Preston Foster. Covers the exploits of the ground-slogging Marines on Guadalcanal.

CREDITS

Design, Development & Rules: S. Craig Taylor, Jr.

Cover Art: Doug Chaffee

Graphic Art, Gameboard Art & Pasteup: Charles Kibler, Jean Baer

Prep Department Coordinator: Lou Velenovsky

Packaging: Monarch Services and Eastern Box

Playtesters: Jeff Buchaneau, Don Hawthorne, Kevin Hewitt, Bob Liebel, Rex Martin, George Petronis, Edward Phillips, Everett Post, James Turner and Byron Wolfe



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APPENDIX D
NEW GAME RULES AND SCENARIO SETUP
INFORMATION

NEW AND ENHANCED RULES FOR PHILIPPINE SEA AND LEYTE GULF

11d4) During the Philippine Sea and Leyte Gulf scenarios, American repair rates are increased as follows:

- 11d4.1) If a damaged American vessel remains stationary for two daylight turns, it may remove one hit point.
- 11d4.2) If a damaged American vessel remains stationary for one night turn, it may remove one hit point.
- 11d4.3) A damaged American air unit may remove one hit per night turn that it remains 'on board' or 'on ground'.
- 11d4.4) American vessels may remove a maximum of three hits every six turn period. While using these rates there is no limit to the number of hits a unit can remove each game.
- 11d4.5) All other rules of 11d still apply in conjunction with these repair rules (reminder: units can never unflip). Japanese units still repair without these enhancements.

11e4) During the Philippine Sea scenarios submarine attacks are conducted as follows:

- 11e4.1) Only actual submarine units may attack. They may attack at any time during the combat or air return phases. Submarines may only attack discovered enemy task forces in the same hex as the submarine where exact information of the task force's components have been determined. Submarines may only attack once per turn.
- 11e4.2) The attacking player determines which specific ship unit in that task force is to be attacked, and both players role for combat as normal, with the following modifications taken into account:
 - 11e4.21) If the defending unit has an 'a' armor factor, the unit receives a minus three modification to its die role.
If the defending unit has a 'b', 'c', or 'd' armor factor, the unit's defensive value is rebased to zero.
If the defending unit is a 'DD' or then the unit's defense does not change at all from the printed value on the unit.
Submarines attack with the printed value on their unit. They receive a plus three bonus if attacking at night, and a plus four bonus if attacking a 'dead in the water' ship.
- 11e4.3) Once a submarine's attack has been resolved, the defensive player may then initiate ASW combat. For every surviving individual destroyer in the defending task force, the defending player gets one die roll against the enemy submarine. If the defensive die roll is five times or more then the submarine's roll, then the submarine is sunk.
- 11e4.3) There may be only one submarine per hex on the search board.

20) MODIFIED ANTI-AIRCRAFT VALUES AND COMBAT

- 20a) Japanese Anti-Aircraft values are modified during the Philippine Sea and Leyte Gulf scenarios as follows:

- 20a1) The battleship *Yamato*'s anti-aircraft value is increased to seven (7) to match her sister's, the *Musashi*, value.
- 20a2) If a Japanese anti-aircraft combat involves two or more ships with AA values greater than zero (0), and one or more of which is a battleship or aircraft carrier (BB, CV, or CVL), then that AA combat gets a bonus of plus one.
- 20b) American anti-aircraft values are also modified during the Philippine Sea and Leyte Gulf scenarios as follows:
 - 20b1) All American battleships (BB) with a speed of '2' on their front side have their AA values increased by three. On their backside these same battleships have their AA values increased by two.
 - 20b2) All American cruisers (CA and CL) and destroyers (DD) that have an AA value of '1' or '2' on their front side have their AA values increased by one. These ships retain this increase when flipped.
 - 20b3) The AA value of the carrier *Enterprise* is increased by one. If the *Enterprise* is flipped, she loses the plus one modification.
- 20c) Modified American AA combats
 - 20c1) Radar guided AA defense: For every AA combat that involves two or more American ships with AA values greater than zero, and involves one or more unflipped cruiser, battleship, or carrier (CL, CA, BB, CVL, or CV), that combat gains a plus one bonus to its AA value.
 - 20c2) Proximity Fuses: All American battleships and carriers (BB and CV) except *Enterprise* gain a plus one modification to their AA values. This bonus is only taken away if the ship is 'dead in the water'.
- 20d) Modified victory point values

With these upgrades in AA capabilities, the victory points for the ships mentioned should be changed. The *Yamato* is now worth the same as her sister, the *Musashi*, 35 points if sunk and 12 if flipped. Except for the *North Carolina*, *South Dakota*, and *Iowa* classes, all American battleships are now worth two more points if sunk and one more if flipped. This makes the *Maryland* class worth 22 and 8, and the *California*, *Pennsylvania*, and *New Mexico* classes worth 21 and 8. All other ships retain their original values.
- 21) MODIFIED BASE RULES
 - 21a) In the Philippine Sea scenario the Guam base is already considered to be destroyed. However, it still operates under the following rules:
 - 21a1) The Guam base uses the capacity and flipped launch values of the 'Shortland' base from Guadalcanal.
 - 21a2) The Guam base has a defense value of '6a'.
 - 21a3) The Guam base has an AA value of '0'. This value may be used in AA combat every time the base is bombed, and may also be used against patrollers (see rule 23d7).
 - 21b) Base damage during the Leyte Gulf scenarios is treated as follows:

- 21b1) Bases can remove one hit per turn unless it is destroyed or flipped with no hits.
- 21b2) If a base is flipped, it takes two consecutive turns to repair it to the unflipped with two hits state, assuming there is no further damage inflicted. Bases may not unflip until all hits are repaired.
- 21b3) If a base is destroyed:
 - 21b3.1) It takes three consecutive turns to repair it to a flipped with two hits state. Full points for destroying a base are only awarded for its initial destruction. For every subsequent time the base is destroyed, the opposing player is awarded one-fourth the bases full worth.
 - 21b3.2) Air units currently 'on ground' of that base roll for damage; they are not automatically destroyed (see rule 11b, but 11b4 is nullified).
 - 21b3.3) Air units can still land on that base up to its printed capacity. When landing, each air unit must roll a die to determine if it suffers damage upon landing. If a '0' or '1' is rolled, that air unit takes a hit.
 - 21b3.4) Flying seaplane units do not pay heed to rule 21b3.3. These units include PBYS, H6Ks, H8Ks, and E13As.
 - 21b3.5) Destroyed bases have an AA value of '0'.
- 21b4) All new rules outlined in 21b may be used in Midway and Guadalcanal scenarios if players desire to use them.

22) FIGHTER-BOMBERS

- 22a) Aircraft units that have the F/D designations are fighter-bombers and have special abilities beyond normal fighters and/or dive bombers. F/D air units may either be used as fighters or dive bombers.
- 22b) Only one F/D unit may be armed as a 'D' (dive bomber) per carrier per turn.
- 22c) F/D units that have been armed as a 'D' may switch their designation back to an 'F' designation at any time and act as a fighter. Units that have switched back to an 'F' designation may not switch back to a 'D' designation until that unit has landed on an aircraft carrier and rearmed.
- 22d) The air to air value of F/D units that are armed as 'D' units are reduced to half their printed value (round up).
- 22e) All other rules that apply to 'D' units also apply to F/D units armed as 'D' units. Conversely, all rules that apply to 'F' units also apply to F/D units armed as 'F' units.

23) ENHANCED FIGHTER RULES

American fighter squadrons ('F' and 'F/D' units armed as 'F') exhibit special properties during the Philippine Sea and Leyte Gulf scenarios.

- 23a) American fighter squadrons always attack first during air-to-air combat.

- 23b) In the Historical scenarios of the Battles of Philippine Sea and Leyte Gulf, American fighter squadrons always achieve a 'break through' during air to air combat, whether or not their target enemy fighter group has been destroyed.
- 23c) American fighter squadrons have a one hex patrol area around the task force that they have been assigned to as CAP. Only High CAP squadrons may perform these functions.
 - 23c1) During the enemy search phase, fighter squadrons on High CAP may intercept any enemy search planes that enter their patrol area. Combat against these search planes are then conducted immediately. Once the CAP unit has moved to intercept and conducted combat against the enemy search unit, that CAP unit may not be moved again during the search phase to intercept any other search units. However, if other enemy search units enter the hex in which the CAP unit was moved to, then the CAP unit may attempt to intercept and shoot down the newly arriving search unit(s).
 - 23c2) During the enemy combat phase all CAP units that were moved/used during the enemy search phase return to their task forces and may perform more interceptions. If the Japanese player has an incoming strike, the Japanese player must state through which hex of the CAP's patrol area the strike is flying through. If the American player wishes, he may then move his CAP unit/s to intercept in that hex, and air to air combat proceeds as normal in that hex. Like with intercepting search planes, the CAP flying this interception may not move again during the combat phase, but may intercept any other Japanese air units flying through that hex. Any surviving Japanese aircraft may then move on to the hex containing the target task force, and any CAP still patrolling that task force also engage the incoming Japanese strike in normal air to air combat.
 - 23c3) CAP units are not restricted to intercepting search planes or incoming strikes that are attacking their specific Task Force. If the target task force is within patrol range, or if the enemy strike crosses into the patrol range of another task force while moving to the strike's target, the non-targeted task force's CAP may be used to protect the target task force and intercept enemy strikes. However, under no circumstances may the CAP of a task force move outside its one hex patrol range.
 - 23c4) If the Japanese player searches a hex that an American Task Group is located without first searching any hexes in the patrol area around that Task Group, the Japanese search plane may not be intercepted. However, if the Japanese are searching with their strikes (Rule 25a) and find a Task Group, those strikes may always be intercepted, and the Japanese player must tell the American player which hex the strike traveled through to attack the US fleet.

- 23d) American fighter squadrons may be used to patrol enemy air bases.
 - 23d1) To patrol an enemy air base the American player flies as many fighter squadrons as they want to the enemy base's hex, and indicate with the 'patrol' marker on the search board that the squadrons are now on patrol.
 - 23d2) The fighter squadrons may remain on patrol for a maximum of two turns, only if they have sufficient fuel
 - 23d3) Any Japanese squadron attempting to take off or land on that base is immediately engaged individually in air to air combat with the patrolling American fighter squadrons.
 - 23d4) Japanese air units are unable to return fire against the intercepting American patrol.
 - 23d5) American patrolling fighters may shoot at a maximum of three enemy air units before they must return to their carriers to rearm.
 - 23d6) During these patrols, any Japanese scout units attempting to land have a defense value of one (1) and only need one hit to destroy.
 - 23d7) Every time an American patroller shoots at a Japanese unit landing or taking off, the anti-aircraft guns of the Japanese base gets to shoot at the American unit. The current AA value of the Japanese base shoots at the American patroller every time after the patroller shoots at a Japanese air unit.

- 24) TASK FORCE 34/58.7
 - 24a) Task Force 34/58.7 is a fleet that may be formed and disbanded multiple times during the course of a scenario. To form Task Force 34/58.7, the ships from the carrier groups forming the task force must all share a common hex that is within one hex or less of all the contributing task forces. If there are multiple common hexes, the American player may decide which hex to form the task force in.
 - 24b) Task Force 34/58.7 is formed at the start of the Sea Movement Step and may not move during the turn it is formed. The carrier task groups that contribute to Task Force 34/58.7 may move after the ships of that task group have moved out of that group and are placed into the appropriate task force box on the operations chart.
 - 24c) To disband Task Force 34/58.7, the ships in the task force must be placed in other friendly task forces are within one hex or less of Task Force 34/58.7. Task Force 34/58.7 is disbanded at the start of the sea movement step. When Task Force 34/58.7 is disbanded, no task forces that Task Force 34/58.7 has parceled ships into may move that turn.
 - 24d) Only battleships, cruisers, and destroyers (BB, CA, CL, and DD) may form into Task Force 34/58.7. Aircraft carriers (CV, CVL, CVE) may never join Task Force 34/58.7.
 - 24e) When a carrier task force is sending ships to join Task Force 34/58.7, the carrier task force must retain enough escort ships to cover any carriers in that task force. For every one carrier (CV or CVL) in a task force two

other ships (BB, CA, CL, or individual DD) must remain in that task force to cover the carriers.

- 24f) Ships that did not start the game in the carrier groups (Task Groups 38.1, 38.2, 38.3, 38.4, 58.1, 58.2, 58.3, or 58.4) or in Task Force 34/58.7 may not join or form into Task Force 34/58.7.

25) **ADDITIONAL AIRCRAFT RULES**

Aircraft assigned to air strikes may perform searches (for example, if search planes did not find a desired target). Squadrons in each wave may either search hexes individually, or in a group of squadrons. Squadrons from a 'normal strike' may not join squadrons in a 'max strike' in searching, but they might be able to attack the same target together. (see rule 26c).

25a1) If contact is made by a searching squadron/group from 'normal strike' planes, then out of all 'normal strike' attacks, only the squadron or group that made this contact can attack that target.

25a2) All 'max strike' attacks may be directed to any contacts made by 'normal strike' searchers.

25a3) If contact is made by a searching squadron/group from 'max strike' planes, then out of all 'max strike' attacks, only the squadron or group that made this contact can attack that target.

25b) Fighters placed in 'normal strike' or 'max strike' modes may be redirected to become CAP. 'Normal strike' fighters can become High CAP, while 'max strike' fighters can become Low CAP. Fighters that have been redirected to become CAP may not shoot at or attempt to intercept enemy search planes. However, such fighters may intercept incoming enemy strikes.

25c) 'Normal' and 'max' strikes may be combined into a single strike. However, all 'normal strike' aircraft that are combining with 'max strike' aircraft lose one movement point to their range for that turn.

26) **RADAR**

26a) The American advances in radar gave them a tremendous advantage in 1944. If the players desire to, the Japanese are always Side B in all surface battles played in the Philippine Sea and Leyte Gulf scenarios (including the individual surface scenarios).

1) SCENARIO ONE – THE BATTLE OF PHILIPPINE SEA: June 19 – 20, 1944.

1a) TIME: Starts with June 19, Turn 8 and ends after June 20, Turn 17 (10 Turns).

1b) ALLIED SETUP INFORMATION:

Task Group 58.1: Place in any 'I' area hex at game's start.

1 CV – Hornet (II): 1F2, 2F2, 3F2, B2, S2, T2, F76B, Scouts I and VIII

1 CV – Yorktown (II): 1F1, 2F1, 3F1, 1B1, 2B1, S1, T1, F77B, Scouts II and IX

1 CVL – Belleau Wood: 1F24, 2F24, T24, Scout X

1 CVL – Bataan: 1F50, 2F50, T50, Scout XI

3 CA – Boston, Baltimore, Canberra (II)

1 CL – Oakland
3 DD - #3, #4, #8

Task Group 58.2: Place in any 'I' area hex at game's start.

1 CV – Bunker Hill: 1F8, 2F8, 3F8, B8, S8, T8, F76A, Scouts III and XII
1 CV – Wasp (II): 1F14, 2F14, 3F14, B14, S14, T14, F77C, Scouts IV and XIII
1 CVL – Monterey: 1F28, 2F28, T28, Scout XIV
1 CVL – Cabot: 1F31, 2F31, T31, Scout XV
4 CL – San Juan, Santa Fe, Mobile, Biloxi
3 DD - #5, #9, #11

Task Group 58.3: Place in any 'I' area hex at game's start.

1 CV – Enterprise: 1F10, 2F10, 3F10, B10, S10, T10, F101C, Scouts V and XVI
1 CV – Lexington (II): 1F16, 2F16, 3F16, B16, S16, T16, F76C, Scouts VI and XVII
1 CVL – San Jacinto: 1F51, 2F51, T51, Scout XVIII
1 CVL – Princeton: 1F27, 2F27, T27, Scout XIX
1 CA – Indianapolis
4 CL – Reno, Montpelier, Cleveland, Birmingham
3 DD - #10, #12, #15

Task Group 58.4: Place in any 'I' area hex at game's start.

1 CV – Essex: 1F15, 2F15, 3F15, B15, S15, T15, F77A, Scouts VII and XX
1 CVL – Langley (II): 1F32, 2F32, T32, Scout XXI
1 CVL – Cowpens: 1F25, 2F25, T25, Scout XXII
4 CL – San Diego, Vincennes (II), Miami, Houston (II)
3 DD - #1, #16, #17

Task Group 58.7: Place in any 'I' area hex at game's start.

7 BB – North Carolina, Washington, South Dakota, Indiana, Alabama, Iowa, New Jersey
4 CA – Wichita, Minneapolis, New Orleans, San Francisco
3 DD – #13, #14, #18

Submarines: Place in any hex west of column 'I' (inclusive) and south of row '5' (inclusive), a maximum of one submarine per hex, at game's start.

11 SS – Albacore, Finback, Seawolf, Stingray, Bang, Flying Fish, Seahorse, Muskallunge, Pipefish, Cavalla, Growler

1c) JAPANESE SETUP INFORMATION

A Force: Place in any 'III' area hex at game's start.

1 CV – Taiho: 1TF, 2TF, 1TD, 2TD, TT, Scouts I and V
1 CV – Shokaku: 1SF, 2SF, 1SD, 2SD, ST, Scouts II and VI
1 CV – Zuikaku: 1ZF, 2ZF, 1ZD, 2ZD, ZT, Scouts III and VIII
2 CA – Myoko, Haguro
1 CL – Yahagi
2 DD - #3, #7

B Force: Place in any 'III' area hex at game's start.

1 CV – Junyo: 1JF, 2JF, JD, JT, Scout AA

1 CV – Hiyo: 1HF, 2HF, HD, HT, Scout BB

1 CVL – Ryuho: 1RYF, 2RYF, RYT

1 BB – Nagato

1 CA – Mogami ('43)

2 DD - #1, #8

C Force: Place in any 'II' area hex at game's start.

1 CVL – Chitose: 1CTF, 2CTF, CTT, Scout VIII

1 CVL – Chiyoda: 1CYF, 2CYF, CYT, Scout IX

1 CVL – Zuiho: 1ZHF, 2ZHF, ZHT, Scout X

4 BB – Yamato, Musashi, Kongo, Haruna

2 AV – Chikuma, Tone

6 CA – Atago, Chokai, Maya, Takao, Kumano, Suzaya

2 DD - #4, #10

Supply Force: Enter in hex 'A1', 'A2', or 'A3' on Turn 12.

1 AP – IV

1 DD - #2

Guam ("O7") Base:

1AF61, 2AF61, 3AF61, 4AF61

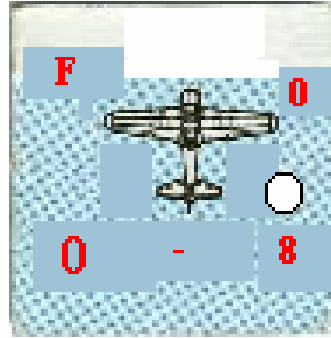
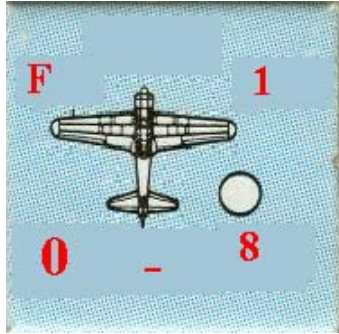
1d) Special Rules:

- 1d1) The Japanese side wins by scoring more victory points than the American side. The American side wins with 50 or more victory points than the Japanese side has.
- 1d2) Alternatively, the Japanese side wins by sinking one American carrier (CV or CVL). The American side wins if over 75% of the Japanese air squadrons are shot down (30 squadrons or more) or if two or more Japanese carriers (CV and/or CVL) are sunk. Any other result is a tie.
- 1d3) The Guam base is already considered to be destroyed at game's start but can still operate planes. The Guam base uses the capacity and flipped launch value of the 'Shortland' base from Guadalcanal. The Guam base can be raided and has a defense value of 6a.
- 1d4) Historical scenario rules
- 1d4a) To reflect the poor skills of the Japanese pilots, the Japanese air counters have the following values:

If the counter is an 'F' unit:

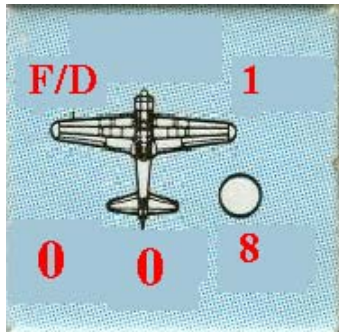
Front Side:

Back Side (or front if back reads ELIM):

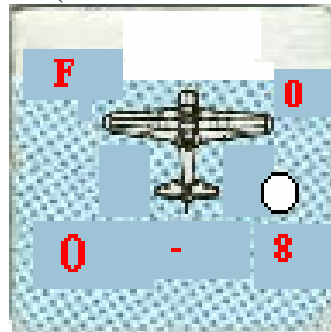


If the counter is an 'F/D' unit:

Front Side:

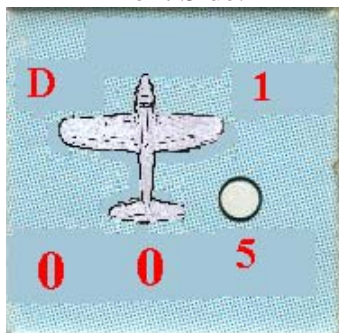


Back Side (or front if back reads ELIM):

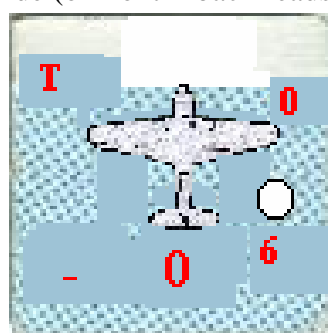


If the counter is a 'D' or 'T' unit:

Front Side:



Back Side (or front if back reads ELIM):



1d4b) On June 20 the Japanese fleet was low on fuel. To simulate this, all ships in Forces A, B, and C, have a movement factor of '2' on the search board (except for ships with a movement factor of '1', which keep their factor unaltered). However, if a Japanese Force reaches the Supply Force and remains in the same hex as the Supply Force for one full turn, that Force is considered refueled and can move at their printed values on the search board. The Supply Force may only refuel one other Force per turn.

1d4c) To accurately replay the Battle of Philippine Sea it is suggested that the American player not attack the Japanese fleet before turn 13, and that the Japanese fleet may not move to retreat until after turn 12.

1e) It is highly suggested that rule 12c1 is used during the Philippine Sea scenarios.

1f) To attempt to balance the game, the Japanese may replace the air groups on their carriers as follows:

CV Taiho – SHF, ZHF, 2AG2, 2HD, HT, Scouts I and V.

CV Shokaku – 1SF, 2SF, 1SD, 2SD, 1ST, Scouts II and VI.

CV Zuikaku – 1ZF, 2ZF, 1ZD, 2ZD, 1ZT, Scouts III and VII.

CV Junyo – 1SYF, 2SYF, JD, JT, Scout AA.

CV Hiyo – 1HYF, 2HYF, 1HD, HT, Scout BB.

CVL Ryuho – 1RF, 2RF, ZHT.

CVL Chitose – 1AF, 2AF, 1AT, Scout VIII.

CVL Chiyoda – 1KF, 2KF, 1KT, Scout IV

CVL Zuiho – 1ZHF, 2ZHF, ZHTP.

The ranges of these counters should be changed as follows:

If the air unit is an 'F' unit the range is 8.

If the air unit is a 'D' unit the range is 5.

If the air unit is a 'T' unit the range is 6.

Also, the unit 2AG2 should be considered to have a white basing color instead of green.

This replacement represents the abilities of the Japanese air groups if the elite Japanese pilots available in 1941 were present at the Battle of Philippine Sea. All of these units (except for the scouts) can be found in the *MIDWAY* and *GUADALCANAL* games.

1g) The American side holds the free roll marker at game's start.

2) SCENARIO TWO: THE BATTLE OF LEYTE GULF: October 23 – 25, 1944

2a) TIME: Starts with October 23, Turn 6 and ends after October 25, Turn 17 (12 turns)

2b) ALLIED SETUP INFORMATION

Task Group 38.1: Enters any '11' row hex south of 'N' column on turn 13.

1 CV – Wasp (II): 1F14, 2F14, 3F14, 1B14, 2B14, S14, T14, Scouts XXIII and UU

1 CV – Hornet (II): 1F11, 2F11, 3F11, B11, S11, T11, Scouts V and XI

1 CV – Hancock: 1F7, 2F7, 3F7, 1B7, 2B7, S7, T7, Scouts IV and X

1 CVL – Monterey: 1F28, 2F28, T28, Scout XVIII

1 CVL – Cowpens: 1F22, 2F22, T22, Scout XVI

3 CA – Chester, Salt Lake City, Pensacola

2 CL – Oakland, San Diego

3 DD - #3, #4, #9

Task Group 38.2: Place in any open sea hex south of 'N' column and east of the Philippines at game's start.

1 CV – Intrepid: 1F18, 2F18, 3F18, B18, S18, T18, Scouts VI and XII

1 CVL – Cabot: 1F29, 2F29, T29, Scout XV

- 1 CVL – Independence: 1F41, 2F41, T41, Scout XXIV
- 2 BB – Iowa, New Jersey
- 3 CL – Vincennes (II), Biloxi, Miami
- 3 DD - #1, #8, #11
- Task Group 38.3:** Place in any open sea hex south of ‘N’ column and east of the Philippines at game’s start.
 - 1 CV – Essex: 1F15, 2F15, 3F15, 4F15, B15, S15, T15, Scouts II (SB2C) and VIII
 - 1 CV – Lexington (II): 1F19, 2F19, 3F19, B19, S19, T19, Scouts XXII and XIII
 - 1 CVL – Langley (II): 1F44, 2F44, T44, Scout XVII
 - 1 CVL – Princeton: 1F27, 2F27, T27, Scout XIX
 - 2 BB – South Dakota, Massachusetts
 - 4 CL – Santa Fe, Mobile, Birmingham, Reno
 - 3 DD - #12, #13, #14
- Task Group 38.4:** Place in any open sea hex south of ‘N’ column and east of the Philippines at game’s start.
 - 1 CV – Enterprise: 1F20, 2F20, 3F20, 1B20, 2B20, S20, T20, Scouts I and VII
 - 1 CV – Franklin: 1F13, 2F13, 3F13, 1B13, 2B13, S13, T13, Scouts III and IX
 - 1 CVL – San Jacinto: 1F51, 2F51, T51, Scout XX
 - 1 CVL – Belleau Wood: 1F21, 2F21, T21, Scout XIV
 - 2 BB – Washington, Alabama
 - 2 CA – New Orleans, Wichita
 - 3 DD - #10, #15, #20
- Task Group 77.2:** Place in hex ‘G9’ (Tacloban base) at game’s start.
 - 6 BB – Pennsylvania, Mississippi, Tennessee, California, Maryland, West Virginia
 - 3 CA – Louisville, Portland, Minneapolis
 - 2 CL – Denver, Columbia
 - 3 DD - #2, #6, #16
- Task Group 77.3:** Place in hex ‘G9’ (Tacloban base) at game’s start.
 - 1 CA – Shropshire
 - 2 CL – Phoenix, Boise
 - 3 DD - #17, #18, #21
- Task Group 77.4:** Place in hex ‘G9’ (Tacloban base) at game’s start.
 - 1 CVE – Casablanca I: Fsq20, Tsq20, Fsq21, Tsq21, Fsq80, Tsq80, Fsq81, Tsq81
 - 1 CVE – Casablanca II: Fsq78, Tsq78, Fsq76, Tsq76
 - 1 CVE – Casablanca III: Fsq27, Tsq27, Fsq75, Tsq75
 - 1 CVE – Casablanca IV: Fsq5, Tsq5, Fsq10, Tsq10
 - 1 CVE – 4 CVE: Fsq3, Tsq3, Fsq4, Tsq4, Fsq65, Tsq65, Fsq68, Tsq68
 - 1 CVE – Sangamon: 1F26, 2F26, T26, 1F35, 2F35, T35, 1F37, 2F37, T37, 1F60, 2F60, T60
 - 2 DD – #5, #7

3 DE – #1, #2, #3
Task Group 78.7: Place in any ‘11’ row hex at game’s start.
 4 AP – I, II, III, IV
 6 LST – I, II, III, IV, V, VI
 1 DD – #19
Tacloban (G9) Base: Scouts FF, GG, HH, II (PBY)

2c) JAPANESE SETUP INFORMATION

Carrier Force: Place in any ‘T’ column hex east of Formosa at game’s start.
 1 CV – Shinano: 1SNF, 2SNF, 3SNF, 1SND, 2SND, SNT, Scouts I and V
 (see rule 2d9)

1 CV – Zuikaku: 1ZF, 2ZF, 3ZF, 4ZF, 5ZF, 6ZF
 1 CVL – Chitose: 1CTT, 2CTT
 1 CVL – Chiyoda: CYD
 1 CVL – Zuiho: Scout EE
 2 BB/AV – Hyuga, Ise
 3 CL – Tama, Oyodo, Isuzu
 2 DD - #1, #9 (back)

Force A: Place in or next to hex ‘G2’ at game’s start.
 5 BB – Yamato, Musashi, Nagato, Kongo, Haruna
 2 AV – Tone, Chikuma
 5 CA – Chokai, Myoko, Haguro, Kumano, Suzaya
 2 CL – Noshiro, Yahagi
 3 DD - #3, #4, #5

Force C: Place in or next to hex ‘C3 at game’s start.
 2 BB – Yamashiro, Fuso
 1 AV – Mogami ’43
 1 DD - #7

Second Striking Force: Place in or next to hex ‘M2 at game’s start.
 2 CA – Nachi, Ashigara
 1 CL – Abakuma
 1 DD – #8

Clark (M5), Davao (B9), Formosa (T4), and Manila (K5) Bases: Place the respective base units in their hexes. The air units may be spread among them in any desired manner, except the AFS and the three D4Y units must be placed at either Manila or Clark.

8 A6Ms, 3 D4Ys, 6 G3Ms, 13 G4Ms, AFS, Scouts II (H8K), JJ, KK, LL, MM, NN, XI, XII, XIII, XIV, XV, XVI

2d) Special Rules:

2d1) Victory conditions:

2d1a) The Japanese side wins if they score more points than the American side. The American side wins if they score at least 80 points than the Japanese side.

2d1b) Alternatively, the Japanese side wins if they engage Task Force 78.7 in surface combat and sink twelve transports and/or LSTs (count individual ships). The

- American side wins if they can prevent the Japanese victory conditions and sink over one third of the Japanese fleet (count individual destroyers), i.e. more than 21 ships.
- 2d1c) American AP and LST units may only unload in hex G9 for victory points. For every AP or LST unit that remains in hex G9 at game's end, one victory point is awarded for every turn each individual AP or LST unit remained in G9 the entire turn. It is suggested that the American player keep a paper record of these points during the game.
 - 2d2) The Japanese side holds the free roll marker at the game's start. The night fighting modifier to the Japanese side's roll is -2.
 - 2d3) American escort carrier aircraft special rules.
 - 2d3a) Aircraft that start on escort carriers (CVEs) at the start of the game may only base on escort carriers or Tacloban airbase unless there is no longer enough capacity to hold all the planes (due to sinkings), in which case they may base on any other carrier in range.
 - 2d3b) The fighters and fighter/dive bombers of these aircraft groups may only be used for defensive purposes only. These aircraft may also only attack an enemy fleet if that fleet is located and found to be within one hex or less of the location of the escort carriers. Also, an enemy fleet that attacked the escort carriers a turn previous to the current one may be attacked by the escort carrier's air groups no matter what distance it is from the escort carriers. The escort carrier's planes may also attack any other enemy fleets that are in the same hex of the enemy fleet under attack, whether that fleet attacked the escort carriers earlier or not.
 - 2d4) Movement restrictions
 - 2d4a) American Task Groups 77.2, 77.3, 77.4, and 78.7 must stay within two hexes of Tacloban airbase at all times.
 - 2d4b) Ships in Task Groups 38.1, 38.2, 38.3, 38.4, and Task Force 34 may not recombine with any ships in Task Groups 77.2, 77.3, 77.4, and 78.7, and vice-versa.
 - 2d4c) Japanese Task Groups may not withdraw from the map board until either two Japanese carriers have been sunk, or the both battleships *Yamato* and *Musashi* have been sunk. If the Japanese engage U.S. Task Force 78 in surface combat, the Japanese Task Groups may then withdraw.
 - 2d5) Kamikazes
 - 2d5a) The Kamikaze unit (designated with a 'K') is not present at the start of the game. It is formed during the Assembly step any turn after October 24. To form the Kamikaze unit the Japanese player may use any surviving land based 'D' or 'F' unit.
 - 2d5b) If the Kamikaze unit is formed from an unflipped squadron, flip the squadron to its back side and place the Kamikaze unit at the base the squadron is located (Note: there are now two air units created from the single squadron). If the Kamikaze unit is formed from a flipped squadron, remove that squadron from the game and replace it with the Kamikaze unit. Any hits that the original squadron had suffered must either remain on the original squadron (which would also now be flipped) or transferred to the Kamikaze unit. Obviously, hits may only be retained on the original squadron if that squadron began unflipped. If the original (unflipped) squadron had two hits, these hits may not be split up (such as one hit

- on the now flipped original squadron and one hit on the Kamikaze unit; instead, both hits must either follow to the new K unit, or stay with the original squadron).
- 2d5c) Kamikazes are not destroyed in the usual manner of other air squadrons. Kamikazes can only be destroyed from hits; they cannot be flipped or eliminated outright a single combat. Hits are obtained by exceeding the Japanese die roll in combat, as in normal air combat. However, if a Kamikaze suffers two hits before making its attack on a U.S. ship, the K unit suffers a -2 penalty to its bombing and defense factors.
- 2d5d) Kamikazes attack like dive bombers, so if the target has any aircraft in its ready box on its air-ops card, then the Kamikaze gets a +4 bonus.
- 2d6) Task Group 38.1
- 2d6a) Task Group 38.1 begins off the map and can be brought in on the stated turn if the American player desires. If Task Group 38.1 is brought onto the game map the Japanese player is awarded 50 points at game's end.
- 2d7) Historical scenario: The rules outlined in rule 1d4a in the Philippine Sea scenario also apply to the historical scenario of the Battle of Leyte Gulf.
- 2d8) The AFS unit must be used in the Historical scenario. But in the non-historic scenarios, the Japanese scouts 'M' and 'N' from the *MIDWAY* game may replace the AFS unit. These scouts are placed on the cruiser *Tone* and *Chikuma* at the choice of the Japanese player. Once the Japanese player decides to use the scouts or the AFS unit, the player may not change that decision at any time during the game.
- 2d9) Although she was not completed in time, the Japanese player may add the carrier *Shinano* and her air group to the Carrier Force. The *Shinano* may be added in any scenario except the Historical.
- 2d10) To attempt to balance the game, the Japanese may replace the air groups on their carriers as follows:
- Zuikaku – 1ZF, 2ZF, 1ZD, 2ZD, ZT, Scouts II and VI
 - CVL Chitose – 1CTF, 2CTF, CTT, Scout VII
 - CVL Chiyoda – 1CYF, 2CYF, CYT, Scout VIII
 - CVL Zuiho – 1ZHF, 2ZHF, ZHT, Scout IX
- This replacement represents the abilities of the Japanese air groups if well trained Japanese pilots were present at the Battle of Leyte Gulf. All of these units are part of the counters used for the Battle of Philippine Sea.
- 2d11) In all scenarios (2,3, 5, and 6), if any American transports or LSTs are sunk in surface combat they are worth double the victory points they are normally worth.

3) **Scenario Three: Nishimura and Shima vs. Oldendorf:**

This is not an overall scenario as were scenarios One and Two. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Search boards are not needed to setup this scenario, only the Battle board, the two Surface Turn markers, and the ship units given below:

- 3a) **TIME:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.
- 3b) **ALLIED SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 6 BB – Pennsylvania, Mississippi, Tennessee, California, Maryland, West Virginia
 4 CA – Louisville, Portland, Minneapolis, Shropshire
 4 CL – Denver, Columbia, Phoenix, Boise
 7 DD - #2, #6, #16, #17, #18, #19, #21
 4 AP – I, II, III, IV
 6 LST – I, II, III, IV, V, VI
- 3c) **JAPANESE SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 2 BB – Yamashiro, Fuso
 1 AV – Mogami '43
 2 CA – Nachi, Ashigara
 1 CL – Abakuma
 2 DD - #7, #8
- 3d) **SPECIAL RULES:**
 3d1) The Japanese side wins with more victory points then the Allied side has. The Allied side wins with five or more victory points then the Japanese side has. Any other result is a 'tie' game.
 3d2) Assume that the opposing task force units entered the battle hex through opposite hexsides, so the ship units setup facing in opposite directions.
 3d3) The Allied side holds the free roll marker at game's start.
- 3e) **SURIGAO STRAIT**
 If players wish to play the historical Battle of Surigao Strait, a few changes can be made to this scenario.
 3e1) Remove the Allied DD #19 and all AP and LST units.
 3e2) The combat takes place during a night turn. The night fighting modifier to the Japanese side's roll is -3.
- 4) **SCENARIO FOUR: KURITA VS. LEE**
 This is not an overall scenario as were scenarios One and Two. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Searchboards are not needed to setup this scenario, only the Battleboard, the two Surface Turn markers, and the ship units given below:
- 4a) **TIME:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.

- 4b) **ALLIED SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 6 BB – Iowa, New Jersey, South Dakota, Massachusetts, Washington, Alabama
 2 CA – New Orleans, Wichita
 3 CL – Vincennes (II), Biloxi, Miami, Santa Fe, Mobile
 4 DD - #8, #10, #11, #15
- 4c) **JAPANESE SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 4 BB – Yamato, Nagato, Kongo, Haruna
 2 AV – Tone, Chikuma
 5 CA – Chokai, Myoko, Haguro, Kumano, Suzaya
 2 CL – Noshiro, Yahagi
 3 DD - #3, #4, #5
- 4d) **SPECIAL RULES:**
 4d1) The Japanese side wins with 25 or more victory points then the Allied side has. The Allied side wins with 20 or more victory points then the Japanese side has. Any other result is a ‘tie’ game.
 4d2) Assume that the opposing task force units entered the battle hex through opposite hexsides, so the ship units setup facing in opposite directions.
 4d3) The Allied side holds the free roll marker at game’s start.
- 5) **KURITA, NISHIMURA, & SHIMA vs. OLDENDORF**
 This is not an overall scenario as were scenarios One and Two. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Searchboards are not needed to setup this scenario, only the Battleboard, the two Surface Turn markers, and the ship units given below:
- 5a) **TIME:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.
- 5b) **ALLIED SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 6 BB – Pennsylvania, Mississippi, Tennessee, California, Maryland, West Virginia
 4 CA – Louisville, Portland, Minneapolis, Shropshire
 4 CL – Denver, Columbia, Phoenix, Boise
 7 DD - #2, #6, #16, #17, #18, #19, #21
 4 AP – I, II, III, IV
 6 LST – I, II, III, IV, V, VI
- 5c) **JAPANESE SETUP INFORMATION:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.

- 6 BB – Yamato, Nagato, Kongo, Haruna, Yamashiro, Fuso
- 1 AV – Mogami '43, Tone
- 2 CA – Nachi, Ashigara, Myoko, Haguro
- 1 CL – Abakuma, Noshiro, Yahagi
- 2 DD - #3, #4, #5, #7, #8
- 5d) **SPECIAL RULES:**
 - 5d1) The Japanese side wins with 15 or more victory points then the Allied side has. The Allied side wins with 5 or more victory points then the Japanese side has. Any other result is a 'tie' game.
 - 5d2) Assume that the opposing task force units entered the battle hex through opposite hexsides, so the ship units setup facing in opposite directions.
 - 5d3) The Allied side holds the free roll marker at game's start.
- 6) **KURITA vs. SPRAGUE, TRANSPORTS, THEN OLDENDORF**

This is not an overall scenario as were scenarios One and Two. This scenario is designed to demonstrate how a surface combat is conducted, and covers only the one surface action as a complete scenario. It is recommended for players who have just read through option 16, which must be used, and wish to see how a surface combat works, or for players looking for a fast game. The Searchboards are not needed to setup this scenario, only the Battleboard, the two Surface Turn markers, and the ship units given below. This surface battle is divided into three phases.

 - 6a) **TIME PHASE 1:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.
 - 6b) **ALLIED SETUP INFORMATION PHASE 1:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 - 1 CVE – Casablanca I: Fsq20, Tsq20, Fsq21, Tsq21, Fsq80, Tsq80, Fsq81, Tsq81
 - 1 CVE – Casablanca II: Fsq78, Tsq78, Fsq76, Tsq76
 - 1 CVE – Casablanca III: Fsq27, Tsq27, Fsq75, Tsq75
 - 1 CVE – Casablanca IV: Fsq5, Tsq5, Fsq10, Tsq10
 - 1 CVE – 4 CVE: Fsq3, Tsq3, Fsq4, Tsq4, Fsq65, Tsq65, Fsq68, Tsq68
 - 1 CVE – Sangamon: 1F26, 2F26, T26, 1F35, 2F35, T35, 1F37, 2F37, T37, 1F60, 2F60, T60
 - 2 DD – #5, #7
 - 3 DE – #1, #2, #3
 - 6c) **JAPANESE SETUP INFORMATION PHASE 1:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 - 4 BB – Yamato, Nagato, Kongo, Haruna
 - 2 AV – Tone, Chikuma
 - 5 CA – Chokai, Myoko, Haguro, Kumano, Suzaya
 - 2 CL – Noshiro, Yahagi
 - 3 DD - #3, #4, #5
 - 6d) All aircraft on the escort carriers may launch an air strike that does not exceed their launch capacity against the Japanese fleet before the surface battle begins. These planes land back on any surviving escort carriers at the end of the surface

- combat. Any planes that cannot land on the escort carriers may then land on Tacloban base. If there are more planes than Tacloban base can hold, then these planes are considered destroyed and count for victory points.
- 6e) **TIME PHASE 2:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.
- 6f) **ALLIED SETUP INFORMATION PHASE 2:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 4 AP – I, II, III, IV
 6 LST – I, II, III, IV, V, VI
 1 DD – #19
- 6g) **JAPANESE SETUP INFORMATION PHASE 2:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides. Any Japanese vessels that survived phase 1 are used again in part 2. Any damage these ships suffered in phase 1 is retained.
- 6h) All aircraft on the escort carriers and Tacloban base may launch an air strike that does not exceed their launch capacity against the Japanese fleet before the surface battle begins. These planes land back on any surviving escort carriers at the end of the surface combat. Any planes that cannot land on the escort carriers may then land on Tacloban base. If there are more planes than Tacloban base can hold, then these planes are considered destroyed and count for victory points.
- 6i) **TIME PHASE 3:** Starts with Surface Turn 1, and ends when the surface combat ends. This combat takes place during a day turn.
- 6j) **ALLIED SETUP INFORMATION PHASE 3:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides.
 6 BB – Pennsylvania, Mississippi, Tennessee, California, Maryland, West Virginia
 4 CA – Louisville, Portland, Minneapolis, Shropshire
 4 CL – Denver, Columbia, Phoenix, Boise
 6 DD - #2, #6, #16, #17, #18, #21
- 6k) **JAPANESE SETUP INFORMATION PHASE 3:** Assume the Japanese are side B this turn (and therefore setup first), and the opponents entered the hex from opposite hex sides. Any Japanese vessels that survived phases 1 and 2 are used again in phase 3. Any damage these ships suffered in phases 1 and 2 is retained.
- 6l) **SPECIAL RULES:**
- 6l1) The Japanese side wins with 30 or more victory points then the Allied side has. The Allied side wins with more victory points than the Japanese side has. Any other result is a 'tie' game.
- 6l2) Assume that the opposing task force units entered the battle hex through opposite hexsides, so the ship units setup facing in opposite directions.
- 6l3) The Japanese side holds the free roll marker at game's start.

APPENDIX E
THE UNITS USED IN PHILIPPINE SEA AND LEYTE GULF

UNITED STATES & ALLIED SHIPS FRONT SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Points if Sunk /Flipped	From:	Used in:	Notes
Enterprise	CV	1d	-		5	3 3c	31/12	MG	MGPSLG	
Essex	CV	1d	-		7	3 4c	37/15	GEN	PSLG	
Yorktown (II)	CV	1d	-		7	3 4c	37/15	PS	PS	
Intrepid	CV	1d	-		7	3 4c	37/15	LG	LG	
Hornet (II)	CV	1d	-		7	3 4c	37/15	PSLG	PSLG	
Franklin	CV	1d	-		7	3 4c	37/15	LG	LG	
Lexington (II)	CV	1d	-		7	3 4c	37/15	PSLG	PSLG	
Bunker Hill	CV	1d	-		7	3 4c	37/15	PS	PS	
Wasp (II)	CV	1d	-		7	3 4c	37/15	PSLG	PSLG	
Hancock	CV	1d	-		7	3 4c	37/15	LG	LG	
Independence	CVL	-	-		4	3 3c	19/7	GEN	LG	
Princeton	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Belleau Wood	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Cowpens	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Monterey	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Cabot	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Bataan	CVL	-	-		4	3 3c	19/7	PS	PS	
Langley (II)	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
San Jacinto	CVL	-	-		4	3 3c	19/7	PSLG	PSLG	
Sangamon	CVE	0d	-		4	2 2d	24/14	LG	LG	
4 CVE	CVE	0d	-		4	2 2d	23/14	GEN	LG	
Casablanca I	CVE	0d	-		4	2 2d	23/14	LG	LG	
Casablanca II	CVE	0d	-		2	2 2d	14/-	LG	LG	
Casablanca III	CVE	0d	-		2	2 2d	14/-	LG	LG	
Casablanca IV	CVE	0d	-		2	2 2d	14/-	LG	LG	
Pennsylvania	BB	5a	-		2	2 6a	19/7	GEN	LG	
Mississippi	BB	5a	-		2	2 6a	19/7	M	LG	
California	BB	5a	-		2	2 6a	20/7	GEN	LG	
Tennessee	BB	5a	-		2	2 6a	20/7	M	LG	
Maryland	BB	7a	-		2	2 6a	21/8	M	LG	
West Virginia	BB	7a	-		2	2 6a	21/8	GEN	LG	
North Carolina	BB	9a	-		6	3 8a	30/10	G	GPS	
Washington	BB	9a	-		6	3 8a	30/10	G	GPSLG	
South Dakota	BB	9a	-		7	3 8a	30/10	G	GPSLG	

Indiana	BB	9a	-	7	3 8a	30/10	GEN	PS	
Massachusetts	BB	9a	-	7	3 8a	30/10	GEN	LG	
Alabama	BB	9a	-	7	3 8a	30/10	GEN	PSLG	
Iowa	BB	10a	-	9	3 9a*	35/12	GEN	PSLG	A
New Jersey	BB	10a	-	9	3 9a*	35/12	GEN	PSLG	A
Baltimore	CA	3b	-	4	3 3b	11/3.	GEN	PS	
Boston	CA	3b	-	4	3 3b	11/3.	PS	PS	
Canberra (II)	CA	3b	-	4	3 3b	11/3.	PS	PS	
Shropshire	CA	3b*	1	2	3 3b	10/3.	LG	LG	B
Salt Lake City	CA	3b	-	2	3 3b	10/3.	G	GLG	
Pensacola	CA	3b	-	2	3 3b	10/3.	M	GLG	
Louisville	CA	3b*	-	2	3 3b	10/3.	GEN	LG	B
Chester	CA	3b*	-	2	3 3b	10/3.	GEN	LG	B
San Francisco	CA	3b*	-	2	3 3b	10/3.	G	GPS	B
New Orleans	CA	3b*	-	2	3 3b	10/3.	M	MGPSLG	B
Minneapolis	CA	3b*	-	2	3 3b	10/3.	M	MGPSLG	B
Indianapolis	CA	3b*	-	2	3 3b	10/3.	GEN	PS	B
Portland	CA	3b*	-	2	3 3b	10/3.	M	MGLG	B
Wichita	CA	3b*	-	2	3 3b	10/3.	GEN	PSLG	B
Cleveland	CL	3c	-	3	3 3b	10/3.	GEN	PS	
Montpelier	CL	3c	-	3	3 3b	10/3.	PS	PS	
Houston (II)	CL	3c	-	3	3 3b	10/3.	PS	PS	
Santa Fe	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Mobile	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Biloxi	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Miami	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Vincennes (II)	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Birmingham	CL	3c	-	3	3 3b	10/3.	PSLG	PSLG	
Columbia	CL	3c	-	3	3 3b	10/3.	LG	LG	
Denver	CL	3c	-	3	3 3b	10/3.	LG	LG	
Phoenix	CL	3c	-	3	3 3b	9/3.	LG	LG	
Boise	CL	2c	-	2	3 3b	9/3.	LG	LG	
San Diego	CL	2d	1	3	3 2c	7/2.	G	PSLG	
San Juan	CL	2d	1	3	3 2c	7/2.	G	PS	
Oakland	CL	2d	1	3	3 2c	7/2.	PSLG	PSLG	
Reno	CL	2d	1	3	3 2c	7/2.	PSLG	PSLG	
1	DD	3d	6	2	3 3d	17/7	M	MGPSLG	

	2	DD	3d		6	2	3 3d	17/7	M	MGLG
	3	DD	3d		5	2	3 3d	16/7	M	MGPSLG
	4	DD	2d		4	2	3 2d	14/6	M	MGPSLG
	5	DD	2d		3	2	3 2d	7/-	M	MGPSLG
	6	DD	3d		6	2	3 3d	17/7	G	GLG
	7	DD	3d		6	2	3 3d	17/7	G	GLG
	8	DD	3d		5	2	3 3d	16/7	G	GPSLG
	9	DD	2d		4	2	3 2d	14/6	G	GPSLG
	10	DD	2d		4	2	3 2d	14/6	G	GPSLG
	11	DD	3d		5	2	3 3d	16/7	PS	PSLG
	12	DD	3d		5	2	3 3d	16/7	PS	PSLG
	13	DD	3d		5	2	3 3d	16/7	PS	PSLG
	14	DD	3d		5	2	3 3d	16/7	PS	PSLG
	15	DD	2d		4	2	3 2d	14/6	PS	PSLG
	16	DD	2d		4	2	3 2d	14/6	PS	PSLG
	17	DD	2d		4	2	3 2d	14/6	PS	PSLG
	18	DD	2d		4	2	3 2d	14/6	PS	PSLG
	19	DD	2d		4	2	3 2d	14/6	LG	LG
	20	DD	3d		5	2	3 3d	16/7	LG	LG
	21	DD	3d		5	2	3 3d	16/7	LG	LG
	1	DE	1d		1	2	2 1d	10/4.	LG	LG
	2	DE	1d		1	2	2 1d	10/4.	LG	LG
	3	DE	0d		0	1	2 1d	4/-	LG	LG
I		AP	-	-		2	1 2d	17/9	G	GLG
II		AP	-	-		2	1 2d	17/9	LG	LG
III		AP	-	-		2	1 2d	17/9	LG	LG
IV		AP	-	-		2	1 2d	17/9	LG	LG
I		LST	-	-		2	1 1d	16/8	LG	LG
II		LST	-	-		2	1 1d	16/8	LG	LG
III		LST	-	-		2	1 1d	16/8	LG	LG
IV		LST	-	-		2	1 1d	16/8	LG	LG
V		LST	-	-		2	1 1d	16/8	LG	LG
VI		LST	-	-		1	1 0d	8/-	LG	LG
Albacore		SS	-		2 -		1 -	2/-	PS	PS
Finback		SS	-		2 -		1 -	2/-	PS	PS
Seawolf		SS	-		2 -		1 -	2/-	PS	PS
Stingray		SS	-		2 -		1 -	2/-	PS	PS

Bang	SS	-	2 -	1 -	2/-	PS	PS
Flying Fish	SS	-	2 -	1 -	2/-	PS	PS
Seahorse	SS	-	2 -	1 -	2/-	PS	PS
Muskallunge	SS	-	2 -	1 -	2/-	PS	PS
Pipefish	SS	-	2 -	1 -	2/-	PS	PS
Cavalla	SS	-	2 -	1 -	2/-	PS	PS
Growler	SS	-	2 -	1 -	2/-	PS	PS

UNITED STATES & ALLIED SHIPS BACK SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Notes
Enterprise	CV	0d	-		3	2 2c	
Essex	CV	0d	-		4	2 2c	
Yorktown (II)	CV	0d	-		4	2 2c	
Intrepid	CV	0d	-		4	2 2c	
Hornet (II)	CV	0d	-		4	2 2c	
Franklin	CV	0d	-		4	2 2c	
Lexington (II)	CV	0d	-		4	2 2c	
Bunker Hill	CV	0d	-		4	2 2c	
Wasp (II)	CV	0d	-		4	2 2c	
Hancock	CV	0d	-		4	2 2c	
Independence	CVL	-	-		2	1 1c	
Princeton	CVL	-	-		2	1 1c	
Belleau Wood	CVL	-	-		2	1 1c	
Cowpens	CVL	-	-		2	1 1c	
Monterey	CVL	-	-		2	1 1c	
Cabot	CVL	-	-		2	1 1c	
Bataan	CVL	-	-		2	1 1c	
Langley (II)	CVL	-	-		2	1 1c	
San Jacinto	CVL	-	-		2	1 1c	
Sangamon	CVE	0d	-		2 2*	2d	C
4 CVE	CVE	0d	-		2 2*	2d	C
Casablanca I	CVE	0d	-		2 2*	2d	C
Casablanca II	CVE	-	-	-	-	-	
Casablanca III	CVE	-	-	-	-	-	
Casablanca IV	CVE	-	-	-	-	-	

Pennsylvania	BB	3a	-	1	1 3a	
Mississippi	BB	3a	-	1	1 3a	
California	BB	3a	-	1	1 3a	
Tennessee	BB	3a	-	1	1 3a	
Maryland	BB	3a	-	1	1 3a	
West Virginia	BB	3a	-	1	1 3a	
North Carolina	BB	4a	-	3	1 4a	
Washington	BB	4a	-	3	1 4a	
South Dakota	BB	4a	-	4	1 4a	
Indiana	BB	4a	-	4	1 4a	
Massachusetts	BB	4a	-	4	1 4a	
Alabama	BB	4a	-	4	1 4a	
Iowa	BB	5a	-	5	2 5a*	A
New Jersey	BB	5a	-	5	2 5a*	A
Baltimore	CA	2b	-	2	2 2b	
Boston	CA	2b	-	2	2 2b	
Canberra (II)	CA	2b	-	2	2 2b	
Shropshire	CA	2b*		1 2*	2b*	B
Salt Lake City	CA	2b*	-	1 2*	2b*	B
Pensacola	CA	2b*	-	1 2*	2b*	B
Louisville	CA	2b*	-	1 2*	2b*	B
Chester	CA	2b*	-	1 2*	2b*	B
San Francisco	CA	2b*	-	1 2*	2b*	B
New Orleans	CA	2b*	-	1 2*	2b*	B
Minneapolis	CA	2b*	-	1 2*	2b*	B
Indianapolis	CA	2b*	-	1 2*	2b*	B
Portland	CA	2b*	-	1 2*	2b*	B
Wichita	CA	2b*	-	1 2*	2b*	B
Cleveland	CL	1c	-	2	2 2b	
Montpelier	CL	1c	-	2	2 2b	
Houston (II)	CL	1c	-	2	2 2b	
Santa Fe	CL	1c	-	2	2 2b	
Mobile	CL	1c	-	2	2 2b	
Biloxi	CL	1c	-	2	2 2b	
Miami	CL	1c	-	2	2 2b	
Vincennes (II)	CL	1c	-	2	2 2b	
Birmingham	CL	1c	-	2	2 2b	

Columbia	CL	1c	-		2	2 2b
Denver	CL	1c	-		2	2 2b
Phoenix	CL	2c	-		1	2 1b
Boise	CL	1c	-		1	2 1b
San Diego	CL	1d		0	1	1 1c
San Juan	CL	1d		0	1	1 1c
Oakland	CL	1d		0	1	1 1c
Reno	CL	1d		0	1	1 1c
1	DD	2d		3	1	3 2d
2	DD	2d		3	1	3 2d
3	DD	2d		3	1	3 2d
4	DD	1d		2	1	3 2d
5	DD	-	-	-	-	-
6	DD	2d		3	1	3 2d
7	DD	2d		3	1	3 2d
8	DD	2d		3	1	3 2d
9	DD	1d		2	1	3 2d
10	DD	1d		2	1	3 2d
11	DD	2d		3	1	3 2d
12	DD	2d		3	1	3 2d
13	DD	2d		3	1	3 2d
14	DD	2d		3	1	3 2d
15	DD	1d		2	1	3 2d
16	DD	1d		2	1	3 2d
17	DD	1d		2	1	3 2d
18	DD	1d		2	1	3 2d
19	DD	1d		2	1	3 2d
20	DD	2d		3	1	3 2d
21	DD	2d		3	1	3 2d
1	DE	0d		0	1	2 0d
2	DE	0d		0	1	2 0d
3	DE	-	-	-	-	-
I	AP	-	-		1	1 1d
II	AP	-	-		1	1 1d
III	AP	-	-		1	1 1d
IV	AP	-	-		1	1 1d
I	LST	-	-		1	1 0d

II	LST	-	-		1	1 0d
III	LST	-	-		1	1 0d
IV	LST	-	-		1	1 0d
V	LST	-	-		1	1 0d
VI	LST	-	-	-	-	-
Albacore	SS	-	-	-	-	-
Finback	SS	-	-	-	-	-
Seawolf	SS	-	-	-	-	-
Stingray	SS	-	-	-	-	-
Bang	SS	-	-	-	-	-
Flying Fish	SS	-	-	-	-	-
Seahorse	SS	-	-	-	-	-
Muskallunge	SS	-	-	-	-	-
Pipefish	SS	-	-	-	-	-
Cavalla	SS	-	-	-	-	-
Growler	SS	-	-	-	-	-

AMERICAN BASES FRONT SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Points if Sunk /Flipped	From:	Used in:
Tacloban	B	-	-		4 -	5a	4/2.	LG	LG

AMERICAN BASES BACK SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor
Tacloban	B	-	-		2 -	5a

JAPANESE SHIPS FRONT SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Points if Sunk /Flipped	From:	Used in:	Notes
Shokaku	CV	1d	-		4	3 3c	27/11	G	GPSLG	
Zuikaku	CV	1d	-		4	3 3c	27/11	G	GPSLG	
Junyo	CV	1d	-		3	2 3c	22/8	G	GPS	
Hiyo	CV	1d	-		3	2 3c	22/8	G	GPS	
Taiho	CV	0d	-		5	3 4c	25/11	GEN	PS	
Shinano	CV	2d	-		7	3 9a	38/16	LG	LG	
Chiyoda	CVL	1d	-		3	3 3c	17/6	GEN	PSLG	
Chitose	CVL	1d	-		3	3 3c	17/6	GEN	PSLG	
Zuiho	CVL	0d	-		2	3 2c	15/5	M	MGPSLG	
Ryuho	CVL	-	-		2	2 1d	11/5.	PS	PS	
Ise	BB/AV	3a	-		3	2 5a	22/8	GEN	LG	
Hyuga	BB/AV	3a	-		3	2 5a	22/8	GEN	LG	
Mogami	AV	2b	-		3	3 3b	13/6	GEN	PSLG	
Tone	AV	3b*		3	2	3 3b	13/6	M	MGPSLG	B
Chikuma	AV	3b*		3	2	3 3b	13/6	M	MGPSLG	B
Yamato	BB	10a	-		4	3 9a	35/12	M	MPSLG	
Musashi	BB	10a	-		7	3 9a	35/12	GEN	PSLG	
Nagato	BB	6a	-		2	2 6a	20/7	M	MPSLG	
Yamashiro	BB	5a	-		2	2 5a	18/7	M	MLG	
Fuso	BB	5a	-		2	2 5a	18/7	M	MLG	
Kongo	BB	4a	-		2	3 4a*	16/5	M	MGPSLG	D
Haruna	BB	4a	-		2	3 4a*	16/5	M	MGPSLG	D
Atago	CA	3b		4	2	3 3b	13/5	M	MGPSLG	
Ashigara	CA	3b		4	2	3 3b	13/5	GEN	LG	
Haguro	CA	3b		4	2	3 3b	13/5	M	MGPSLG	
Myoko	CA	3b		4	2	3 3b	13/5	M	MGPSLG	
Maya	CA	3b		4	2	3 3b	13/5	G	GPSLG	
Nachi	CA	3b		4	2	3 3b	13/5	GEN	LG	
Takao	CA	3b		4	2	3 3b	13/5	G	GPSLG	
Chokai	CA	3b		2	2	3 3b	12/4.	M	MGPSLG	
Suzuya	CA	3b		3	2	3 3b	13/5	M	MGPSLG	
Kumano	CA	3b		3	2	3 3b	13/5	M	MGPSLG	
Oyodo	CL	1c	-		2	3 2d	5/2.	GEN	LG	
Noshiro	CL	1c		2	2	3 2d	8/2.	GEN	LG	

Yahagi	CL	1c	2	2	3 2d	8/2.	GEN	PSLG
Tama	CL	1d	2	1	3 2c	7/3.	LG	LG
Isuzu	CL	1d	2	1	3 2c	7/3.	G	GLG
Abukuma	CL	1d	2	1	3 2c	7/3.	GEN	LG
1	DD	3d	9	2	3 3d	21/10	M	MPSLG
2	DD	3d	9	2	3 3d	21/10	M	MPS
3	DD	3d	8	2	3 3d	20/9	M	MPSLG
4	DD	3d	8	2	3 3d	20/9	M	MPSLG
5	DD	3d	8	2	3 3d	20/9	M	MLG
7	DD	2d	6	2	3 2d	16/7	M	MPSLG
8	DD	2d	6	2	3 2d	16/7	M	MPSLG
9	DD	2d	6	2	3 2d	16/7	M	MLG
10	DD	2d	5	1	3 2d	10/-	M	MPS
IV	AP	-	-	1	1 2d	18/7	G	GPS

JAPANESE SHIPS BACK SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Notes
Shokaku	CV	0d	-		2	2 2c	
Zuikaku	CV	0d	-		2 2*	2c	E
Junyo	CV	0d	-		1	1 1c	
Hiyo	CV	0d	-		1	1 1c	
Taiho	CV	-	-		3	2 2c	
Shinano	CV	1d	-		4	1 5a	
Chiyoda	CVL	0d	-		2	1 1c	
Chitose	CVL	0d	-		2	1 1c	
Zuiho	CVL	-	-		1	1 1c	
Ryuho	CVL	-	-		1	1 0d	
Ise	BB/AV	1a	-		2	1 3a	
Hyuga	BB/AV	1a	-		2	1 3a	
Mogami	AV	1b	-		2	2 2b	
Tone	AV	2b*		2	1	2 2b	B
Chikuma	AV	2b*		2	1	2 2b	B
Yamato	BB	5a	-		2	1 5a	
Musashi	BB	5a	-		4	1 5a	
Nagato	BB	3a	-		1	1 3a	

Yamashiro	BB	3a	-		1	1 3a
Fuso	BB	3a	-		1	1 3a
Kongo	BB	2a	-		1	1 2a
Haruna	BB	2a	-		1	1 2a
Atago	CA	2b		2	1	2 2b
Ashigara	CA	2b		2	1	2 2b
Haguro	CA	2b		2	1	2 2b
Myoko	CA	2b		2	1	2 2b
Maya	CA	2b		2	1	2 2b
Nachi	CA	2b		2	1	2 2b
Takao	CA	2b		2	1	2 2b
Chokai	CA	2b		1	1	2 2b
Suzuya	CA	2b		2	1	2 2b
Kumano	CA	2b		2	1	2 2b
Oyodo	CL	0c	-		1	1 1d
Noshiro	CL	0c		1	1	1 1d
Yahagi	CL	0c		1	1	1 1d
Tama	CL	0d		1	0	1 1c
Isuzu	CL	0d		1	0	2 1c
Abukuma	CL	0d		1	0	2 1c
1	DD	2d		5	1	3 2d
2	DD	2d		5	1	3 2d
3	DD	1d		4	1	3 2d
4	DD	1d		4	1	3 2d
5	DD	1d		4	1	3 2d
7	DD	1d		3	1	3 2d
8	DD	1d		3	1	3 2d
9	DD	1d		3	1	3 2d
10	DD	-	-	-	-	-
IV	AP	-	-		1	1 1d

JAPANESE BASES FRONT SIDE VALUES

Name	Type	Surface combat	Torpedo factor	AA factor	Speed	Defense factor	Points if Sunk /Flipped	From:	Used in:
Clark	B	-	-		7 -	7a	10/5.	LG	LG
Davao	B	-	-		4 -	5a	4/2.	LG	LG

Formosa	B	3c	-	9 -	12a	14/7	LG	LG
Manila	B	-	-	6 -	7a	9/4.	LG	LG

JAPANESE BASES BACK SIDE VALUES

Name	Type	Surface	Torpedo	AA factor	Speed	Defense
Clark	B	-	-		4 -	7a
Davao	B	-	-		2 -	5a
Formosa	B	2c	-		5 -	12a
Manila	B	-	-		3 -	7a

UNITED STATES AIRCRAFT FRONT SIDE VALUES

Name	Type	Picture	Basing Color	Air to Air factor	Bombing factor	Range	Defense Factor	Points if destroyed /flipped	From:	Used in:
F76A	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F76B	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F76C	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F77A	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F77B	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F77C	F*	Hellcat	White		2 -		7	1 1/-	PS	PS
F101C	F*	Corsair	White		2 -		7	1 1/-	PS	PS
Fsq3	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq4	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq5	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq10	F	Wildcat	White		7 -		4	2 2/1.	LG	LG
Fsq20	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq21	F	Wildcat	White		5 -		4	2 2/1.	LG	LG
Fsq27	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq65	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq68	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq75	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq76	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq78	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq80	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
Fsq81	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
1F26	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
2F26	F	Wildcat	White		6 -		4	2 2/1.	LG	LG
2B14	F/D	Hellcat	White		5	5	7	2 3/1.	LG	LG
1F1	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
2F1	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
3F1	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
1F2	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
2F2	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
3F2	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS
1F7	F/D	Hellcat	White		7	4	7	2 3/1.	LG	LG
2F7	F/D	Hellcat	White		7	4	7	2 3/1.	LG	LG
3F7	F/D	Hellcat	White		7	4	7	2 3/1.	LG	LG
1F8	F/D	Hellcat	White		7	4	7	2 3/1.	PS	PS

2F8	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
3F8	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F10	F/D	Hellcat	White	6	3	7	2 3/1.	PS	PS
2F10	F/D	Hellcat	White	6	3	7	2 3/1.	PS	PS
3F10	F/D	Hellcat	White	6	3	7	2 3/1.	PS	PS
1F11	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F11	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
3F11	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F13	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F13	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
3F13	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F14	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
2F14	F/D	Hellcat	White	6	3	7	2 3/1.	PSLG	PSLG
3F14	F/D	Hellcat	White	6	3	7	2 3/1.	PSLG	PSLG
1F15	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
2F15	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
3F15	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
4F15	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F16	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F16	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
3F16	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F18	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F18	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
3F18	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F19	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F19	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
3F19	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F20	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F20	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
3F20	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F21	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F21	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F22	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F22	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F24	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F24	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F25	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS

2F25	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F27	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F27	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F28	F/D	Hellcat	White	6	3	7	2 3/1.	PSLG	PSLG
2F28	F/D	Hellcat	White	6	3	7	2 3/1.	PSLG	PSLG
1F29	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
2F29	F/D	Hellcat	White	3	2	7	2 1/-	LG	LG
1F31	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F31	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F32	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F32	F/D	Hellcat	White	6	3	7	2 3/1.	PS	PS
1F35	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
2F35	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
1F37	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
2F37	F/D	Hellcat	White	3	2	7	2 3/1.	LG	LG
1F41	F/D*	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F41	F/D*	Hellcat	White	3	2	7	2 3/1.	LG	LG
1F44	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
2F44	F/D	Hellcat	White	7	4	7	2 3/1.	LG	LG
1F50	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
2F50	F/D	Hellcat	White	7	4	7	2 3/1.	PS	PS
1F51	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
2F51	F/D	Hellcat	White	7	4	7	2 3/1.	PSLG	PSLG
1F60	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
2F60	F/D	Hellcat	White	6	3	7	2 3/1.	LG	LG
1B1	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
2B1	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S1	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
B2	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S2	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
1B7	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
2B7	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
S7	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
B8	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S8	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
B10	D	Dauntless	White	3	7	5	2 3/1.	GPS	GPS
S10	D	Dauntless	White	3	7	5	2 3/1.	GPS	GPS

B11	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
S11	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
1B13	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
2B13	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
S13	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
B14	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S14	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
1B14	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
S14	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
B15	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S15	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
B15	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
S15	D	Helldiver	White	3	7	7	2 4/2.	LG	LG
B16	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
S16	D	Helldiver	White	3	8	7	2 4/2.	PS	PS
B18	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
S18	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
B19	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
S19	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
1B20	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
2B20	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
S20	D	Helldiver	White	3	8	7	2 4/2.	LG	LG
T26	D	Avenger	White	1	2	5	1 1/-	LG	LG
T35	D	Avenger	White	1	2	7	1 1/-	LG	LG
T37	D	Avenger	White	1	2	7	1 1/-	LG	LG
T60	D	Avenger	White	1	2	7	1 1/-	LG	LG
Tsq3	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq4	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq5	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq10	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq20	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq21	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq27	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq65	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq68	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq75	D	Avenger	White	2	3	7	2 2/1.	LG	LG
Tsq76	D	Avenger	White	1	2	7	1 1/-	LG	LG

Tsq78	D	Avenger	White		2	3	7	2 2/1.	LG	LG
Tsq80	D	Avenger	White		2	3	7	2 2/1.	LG	LG
Tsq81	D	Avenger	White		2	3	7	2 2/1.	LG	LG
T1	T	Avenger	White		2	4	7	2 2/1.	PS	PS
T2	T	Avenger	White		2	5	7	2 2/1.	PS	PS
T7	T	Avenger	White		2	5	7	2 2/1.	LG	LG
T8	T	Avenger	White		2	5	7	2 2/1.	PS	PS
T10	T	Avenger	White		2	4	7	2 2/1.	PS	PS
T11	T	Avenger	White		2	5	7	2 2/1.	LG	LG
T13	T	Avenger	White		2	5	7	2 2/1.	LG	LG
T14	T	Avenger	White		2	5	7	2 2/1.	PS	PS
T14	T	Avenger	White		2	4	7	2 2/1.	LG	LG
T15	T	Avenger	White		3	6	7	2 2/1.	PSLG	PSLG
T16	T	Avenger	White		2	5	7	2 2/1.	PS	PS
T18	T	Avenger	White		2	5	7	2 2/1.	LG	LG
T19	T	Avenger	White		2	5	7	2 2/1.	LG	LG
T20	T	Avenger	White		3	6	7	2 2/1.	LG	LG
T21	T	Avenger	White		1	2	7	1 1/-	LG	LG
T22	T	Avenger	White		1	2	7	1 1/-	LG	LG
T24	T	Avenger	White		1	2	7	1 1/-	PS	PS
T25	T	Avenger	White		1	2	7	1 1/-	PS	PS
T27	T	Avenger	White		1	2	7	1 1/-	PSLG	PSLG
T28	T	Avenger	White		1	2	7	1 1/-	PSLG	PSLG
T29	T	Avenger	White		1	2	7	1 1/-	LG	LG
T31	T	Avenger	White		1	2	7	1 1/-	PS	PS
T32	T	Avenger	White		1	2	7	1 1/-	PS	PS
T41	T*	Avenger	White		1	2	7	1 1/-	LG	LG
T44	T	Avenger	White		1	2	7	1 1/-	LG	LG
T50	T	Avenger	White		1	2	7	1 1/-	PS	PS
T51	T	Avenger	White		1	2	7	1 1/-	PS	PS
T51	T	Avenger	White		1	2	7	0 1/-	LG	LG
FF	S	Catalina	Green	-	-		9 -	1/-	GLG	GLG
GG	S	Catalina	Green	-	-		9 -	1/-	GLG	GLG
HH	S	Catalina	Green	-	-		9 -	1/-	GLG	GLG
II	S	Catalina	Green	-	-		9 -	1/-	GLG	GLG
RR	S	Dauntless	White	-	-		6 -	1/-	GPS	GPS
UU	S	Avenger	White	-	-		6 -	1/-	GLG	GLG

I	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
II	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
III	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
IV	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
V	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
VI	S	Helldiver	White	-	-	7 -	1/-	PSLG	PSLG
VII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
VIII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
IX	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
X	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XI	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XIII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XIV	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XV	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XVI	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XVII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XVIII	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XIX	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XX	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XXI	S	Avenger	White	-	-	7 -	1/-	PSLG	PSLG
XXII	S	Helldiver	White	-	-	7 -	1/-	LG	LG
XXIII	S	Helldiver	White	-	-	7 -	1/-	LG	LG
XXIV	S*	Avenger	White	-	-	7 -	1/-	LG	LG

UNITED STATES AIRCRAFT BACK SIDE VALUES

Name	Type	Picture	Basing Color	Air to Air factor	Bombing factor	Range	Defense Factor
F76A	F*	Hellcat	White	-	-	-	-
F76B	F*	Hellcat	White	-	-	-	-
F76C	F*	Hellcat	White	-	-	-	-
F77A	F*	Hellcat	White	-	-	-	-
F77B	F*	Hellcat	White	-	-	-	-
F77C	F*	Hellcat	White	-	-	-	-
F101C	F*	Corsair	White	-	-	-	-
Fsq3	F	Wildcat	White		3 -		4 1

Fsq4	F	Wildcat	White	3 -		4	1
Fsq5	F	Wildcat	White	3 -		4	1
Fsq10	F	Wildcat	White	4 -		4	1
Fsq20	F	Wildcat	White	3 -		4	1
Fsq21	F	Wildcat	White	3 -		4	1
Fsq27	F	Wildcat	White	3 -		4	1
Fsq65	F	Wildcat	White	3 -		4	1
Fsq68	F	Wildcat	White	3 -		4	1
Fsq75	F	Wildcat	White	3 -		4	1
Fsq76	F	Wildcat	White	3 -		4	1
Fsq78	F	Wildcat	White	3 -		4	1
Fsq80	F	Wildcat	White	3 -		4	1
Fsq81	F	Wildcat	White	3 -		4	1
1F26	F	Wildcat	White	3 -		4	1
2F26	F	Wildcat	White	3 -		4	1
2B14	F/D	Hellcat	White	3	3	7	1
1F1	F/D	Hellcat	White	4	2	7	1
2F1	F/D	Hellcat	White	4	2	7	1
3F1	F/D	Hellcat	White	4	2	7	1
1F2	F/D	Hellcat	White	4	2	7	1
2F2	F/D	Hellcat	White	4	2	7	1
3F2	F/D	Hellcat	White	4	2	7	1
1F7	F/D	Hellcat	White	4	2	7	1
2F7	F/D	Hellcat	White	4	2	7	1
3F7	F/D	Hellcat	White	4	2	7	1
1F8	F/D	Hellcat	White	4	2	7	1
2F8	F/D	Hellcat	White	4	2	7	1
3F8	F/D	Hellcat	White	4	2	7	1
1F10	F/D	Hellcat	White	3	2	7	1
2F10	F/D	Hellcat	White	3	2	7	1
3F10	F/D	Hellcat	White	3	2	7	1
1F11	F/D	Hellcat	White	4	2	7	1
2F11	F/D	Hellcat	White	4	2	7	1
3F11	F/D	Hellcat	White	4	2	7	1
1F13	F/D	Hellcat	White	4	2	7	1
2F13	F/D	Hellcat	White	4	2	7	1
3F13	F/D	Hellcat	White	4	2	7	1

1F14	F/D	Hellcat	White	4	2	7	1
2F14	F/D	Hellcat	White	3	2	7	1
3F14	F/D	Hellcat	White	3	2	7	1
1F15	F/D	Hellcat	White	4	2	7	1
2F15	F/D	Hellcat	White	4	2	7	1
3F15	F/D	Hellcat	White	4	2	7	1
4F15	F/D	Hellcat	White	4	2	7	1
1F16	F/D	Hellcat	White	4	2	7	1
2F16	F/D	Hellcat	White	4	2	7	1
3F16	F/D	Hellcat	White	4	2	7	1
1F18	F/D	Hellcat	White	4	2	7	1
2F18	F/D	Hellcat	White	4	2	7	1
3F18	F/D	Hellcat	White	4	2	7	1
1F19	F/D	Hellcat	White	4	2	7	1
2F19	F/D	Hellcat	White	4	2	7	1
3F19	F/D	Hellcat	White	4	2	7	1
1F20	F/D	Hellcat	White	4	2	7	1
2F20	F/D	Hellcat	White	4	2	7	1
3F20	F/D	Hellcat	White	4	2	7	1
1F21	F/D	Hellcat	White	4	2	7	1
2F21	F/D	Hellcat	White	4	2	7	1
1F22	F/D	Hellcat	White	4	2	7	1
2F22	F/D	Hellcat	White	4	2	7	1
1F24	F/D	Hellcat	White	4	2	7	1
2F24	F/D	Hellcat	White	4	2	7	1
1F25	F/D	Hellcat	White	4	2	7	1
2F25	F/D	Hellcat	White	4	2	7	1
1F27	F/D	Hellcat	White	4	2	7	1
2F27	F/D	Hellcat	White	4	2	7	1
1F28	F/D	Hellcat	White	3	2	7	1
2F28	F/D	Hellcat	White	3	2	7	1
1F29	F/D	Hellcat	White	3	2	7	1
2F29	F/D	Hellcat	White	-	-	-	-
1F31	F/D	Hellcat	White	4	2	7	1
2F31	F/D	Hellcat	White	4	2	7	1
1F32	F/D	Hellcat	White	4	2	7	1
2F32	F/D	Hellcat	White	3	2	7	1

1F35	F/D	Hellcat	White		3	2	7	1
2F35	F/D	Hellcat	White		3	2	7	1
1F37	F/D	Hellcat	White		3	2	7	1
2F37	F/D	Hellcat	White	-	-	-	-	
1F41	F/D*	Hellcat	White		4	2	7	1
2F41	F/D*	Hellcat	White	-	-	-	-	
1F44	F/D	Hellcat	White		4	2	7	1
2F44	F/D	Hellcat	White		4	2	7	1
1F50	F/D	Hellcat	White		4	2	7	1
2F50	F/D	Hellcat	White		4	2	7	1
1F51	F/D	Hellcat	White		4	2	7	1
2F51	F/D	Hellcat	White		4	2	7	1
1F60	F/D	Hellcat	White		3	2	7	1
2F60	F/D	Hellcat	White		3	2	7	1
1B1	D	Helldiver	White		2	4	7	1
2B1	D	Helldiver	White		2	4	7	1
S1	D	Helldiver	White		2	4	7	1
B2	D	Helldiver	White		2	4	7	1
S2	D	Helldiver	White		2	4	7	1
1B7	D	Helldiver	White		2	4	7	1
2B7	D	Helldiver	White		2	4	7	1
S7	D	Helldiver	White		2	4	7	1
B8	D	Helldiver	White		2	4	7	1
S8	D	Helldiver	White		2	4	7	1
B10	D	Dauntless	White		2	4	5	1
S10	D	Dauntless	White		2	4	5	1
B11	D	Helldiver	White		2	4	7	1
S11	D	Helldiver	White		2	4	7	1
1B13	D	Helldiver	White		2	4	7	1
2B13	D	Helldiver	White		2	4	7	1
S13	D	Helldiver	White		2	4	7	1
B14	D	Helldiver	White		2	4	7	1
S14	D	Helldiver	White		2	4	7	1
1B14	D	Helldiver	White		2	4	7	1
S14	D	Helldiver	White		2	4	7	1
B15	D	Helldiver	White		2	4	7	1
S15	D	Helldiver	White		2	4	7	1

B15	D	Helldiver	White		2	4	7	1
S15	D	Helldiver	White		2	4	7	1
B16	D	Helldiver	White		2	4	7	1
S16	D	Helldiver	White		2	4	7	1
B18	D	Helldiver	White		2	4	7	1
S18	D	Helldiver	White		2	4	7	1
B19	D	Helldiver	White		2	4	7	1
S19	D	Helldiver	White		2	4	7	1
1B20	D	Helldiver	White		2	4	7	1
2B20	D	Helldiver	White		2	4	7	1
S20	D	Helldiver	White		2	4	7	1
T26	D	Avenger	White	-	-	-	-	
T35	D	Avenger	White	-	-	-	-	
T37	D	Avenger	White	-	-	-	-	
T60	D	Avenger	White	-	-	-	-	
Tsq3	D	Avenger	White		1	2	7	1
Tsq4	D	Avenger	White		1	2	7	1
Tsq5	D	Avenger	White		1	2	7	1
Tsq10	D	Avenger	White		1	2	7	1
Tsq20	D	Avenger	White		1	2	7	1
Tsq21	D	Avenger	White		1	2	7	1
Tsq27	D	Avenger	White		1	2	7	1
Tsq65	D	Avenger	White		1	2	7	1
Tsq68	D	Avenger	White		1	2	7	1
Tsq75	D	Avenger	White		1	2	7	1
Tsq76	D	Avenger	White	-	-	-	-	
Tsq78	D	Avenger	White		1	2	7	1
Tsq80	D	Avenger	White		1	2	7	1
Tsq81	D	Avenger	White		1	2	7	1
T1	T	Avenger	White		1	2	7	1
T2	T	Avenger	White		1	3	7	1
T7	T	Avenger	White		1	3	7	1
T8	T	Avenger	White		1	3	7	1
T10	T	Avenger	White		1	2	7	1
T11	T	Avenger	White		1	3	7	1
T13	T	Avenger	White		1	3	7	1
T14	T	Avenger	White		1	3	7	1

T14	T	Avenger	White		1	2	7	1
T15	T	Avenger	White		2	3	7	1
T16	T	Avenger	White		1	3	7	1
T18	T	Avenger	White		1	3	7	1
T19	T	Avenger	White		1	3	7	1
T20	T	Avenger	White		2	3	7	1
T21	T	Avenger	White	-	-	-	-	
T22	T	Avenger	White	-	-	-	-	
T24	T	Avenger	White	-	-	-	-	
T25	T	Avenger	White	-	-	-	-	
T27	T	Avenger	White	-	-	-	-	
T28	T	Avenger	White	-	-	-	-	
T29	T	Avenger	White	-	-	-	-	
T31	T	Avenger	White	-	-	-	-	
T32	T	Avenger	White	-	-	-	-	
T41	T*	Avenger	White	-	-	-	-	
T44	T	Avenger	White	-	-	-	-	
T50	T	Avenger	White	-	-	-	-	
T51	T	Avenger	White	-	-	-	-	
T51	T	Avenger	White	-	-	-	-	
FF	S	Catalina	Green	-	-	-	-	
GG	S	Catalina	Green	-	-	-	-	
HH	S	Catalina	Green	-	-	-	-	
II	S	Catalina	Green	-	-	-	-	
RR	S	Dauntless	White	-	-	-	-	
UU	S	Avenger	White	-	-	-	-	
I	S	Helldiver	White	-	-	-	-	
II	S	Helldiver	White	-	-	-	-	
III	S	Helldiver	White	-	-	-	-	
IV	S	Helldiver	White	-	-	-	-	
V	S	Helldiver	White	-	-	-	-	
VI	S	Helldiver	White	-	-	-	-	
VII	S	Avenger	White	-	-	-	-	
VIII	S	Avenger	White	-	-	-	-	
IX	S	Avenger	White	-	-	-	-	
X	S	Avenger	White	-	-	-	-	
XI	S	Avenger	White	-	-	-	-	

XII	S	Avenger	White	-	-	-	-
XIII	S	Avenger	White	-	-	-	-
XIV	S	Avenger	White	-	-	-	-
XV	S	Avenger	White	-	-	-	-
XVI	S	Avenger	White	-	-	-	-
XVII	S	Avenger	White	-	-	-	-
XVIII	S	Avenger	White	-	-	-	-
XIX	S	Avenger	White	-	-	-	-
XX	S	Avenger	White	-	-	-	-
XXI	S	Avenger	White	-	-	-	-
XXII	S	Helldiver	White	-	-	-	-
XXIII	S	Helldiver	White	-	-	-	-
XXIV	S*	Avenger	White	-	-	-	-

JAPAN AIRCRAFT FRONT SIDE VALUES

Name	Type	Picture	Basing Color	Air to Air factor	Bombing factor	Range	Defense Factor	Points if destroyed /flipped	From:	Used in:
A6M	F	Zero	Green		2 -		8	1 2/1.	LG	LG
1CTF	F	Zero	White		1 -		8	0 1/-	PSLG	PSLG
1CYF	F	Zero	White		1 -		8	0 1/-	PSLG	PSLG
1HF	F	Zero	White		3 -		8	1 2/1.	PS	PS
1JF	F	Zero	White		3 -		8	1 2/1.	PS	PS
1RYF	F	Zero	White		3 -		8	1 2/1.	PS	PS
1SF	F	Zero	White		3 -		8	1 2/1.	PS	PS
2SF	F	Zero	White		3 -		8	1 2/1.	PS	PS
1SNF	F	Zero	White		3 -		8	1 2/1.	LG	LG
2SNF	F	Zero	White		3 -		8	1 2/1.	LG	LG
3SNF	F	Zero	White		3 -		8	1 2/1.	LG	LG
1TF	F	Zero	White		3 -		8	1 2/1.	PS	PS
2TF	F	Zero	White		3 -		8	1 2/1.	PS	PS
1ZF	F	Zero	White		3 -		8	1 2/1.	PSLG	PSLG
2ZF	F	Zero	White		3 -		8	1 2/1.	PSLG	PSLG
3ZF	F	Zero	White		3 -		8	1 2/1.	LG	LG
4ZF	F	Zero	White		3 -		8	1 2/1.	LG	LG
1ZHF	F	Zero	White		1 -		8	0 1/-	PS	PS
1AF61	F/D	Zero	Green		2	2	8	1 2/1.	PS	PS
2AF61	F/D	Zero	Green		2	2	8	1 2/1.	PS	PS
3AF61	F/D	Zero	Green		2	2	8	1 2/1.	PS	PS
4AF61	F/D	Zero	Green		2	2	8	1 2/1.	PS	PS
2CTF	F/D	Zero	White		3	2	8	1 2/1.	PSLG	PSLG
2CYF	F/D	Zero	White		3	2	8	1 2/1.	PSLG	PSLG
2HF	F/D	Zero	White		2	2	8	1 2/1.	PS	PS
2JF	F/D	Zero	White		2	2	8	1 2/1.	PS	PS
2RYF	F/D	Zero	White		2	2	8	1 2/1.	PS	PS
5ZF	F/D	Zero	White		3	2	8	1 2/1.	LG	LG
6ZF	F/D	Zero	White		3	2	8	1 2/1.	LG	LG
2ZHF	F/D	Zero	White		3	2	8	1 2/1.	PSLG	PSLG
AFS	D	Jake	Yellow		0	1	4	0 1/-	LG	LG
CYD	D	Judy	White		0	2	5	1 2/1.	LG	LG
D4Y	D	Judy	Green		1	3	5	1 1/-	LG	LG
HD	D	Val	White		1	3	6	1 2/1.	PS	PS

JD	D	Val	White	1	3	6	1 2/1.	PS	PS
1SD	D	Judy	White	1	3	5	1 2/1.	PS	PS
2SD	D	Judy	White	1	3	5	1 2/1.	PS	PS
1SND	D	Judy	White	1	3	5	1 2/1.	LG	LG
2SND	D	Judy	White	1	3	5	1 2/1.	LG	LG
1TD	D	Judy	White	1	3	5	1 2/1.	PS	PS
2TD	D	Judy	White	1	3	5	1 2/1.	PS	PS
1ZD	D	Judy	White	1	3	5	1 2/1.	PSLG	PSLG
2ZD	D	Judy	White	1	3	5	1 2/1.	PSLG	PSLG
CTT	T	Jill	White	0	1	6	0 1/-	PSLG	PSLG
CYT	T	Jill	White	0	1	6	0 1/-	PSLG	PSLG
G3M	T	Nell	Green	0	3	7	1 2/1.	LG	LG
G4M	T	Betty	Green	0	3	9	1 2/1.	LG	LG
HT	T	Jill	White	0	1	6	0 1/-	PS	PS
JT	T	Jill	White	0	1	6	0 1/-	PS	PS
RYT	T	Jill	White	0	1	6	0 1/-	PS	PS
ST	T	Jill	White	1	3	6	1 2/1.	PS	PS
SNT	T	Jill	White	1	3	6	1 2/1.	LG	LG
TT	T	Jill	White	1	4	6	1 2/1.	PS	PS
ZT	T	Jill	White	1	3	6	1 2/1.	PSLG	PSLG
ZHT	T	Jill	White	0	1	6	0 1/-	PSLG	PSLG
1CTT	T	Jill	White	1	3	6	1 2/1.	LG	LG
2CTT	T	Jill	White	1	3	6	1 2/1.	LG	LG
SA	K	Zero	Green	-	6 X		2 0/-	LG	LG
EE	S	Kate	White	-	-	6 -	1/-	G	GLG
II	S	Emily	Green	-	-	13 -	1/-	G	GLG
JJ	S	Emily	Green	-	-	13 -	1/-	G	GLG
KK	S	Mavis	Green	-	-	11 -	1/-	G	GLG
LL	S	Mavis	Green	-	-	11 -	1/-	G	GLG
MM	S	Mavis	Green	-	-	11 -	1/-	G	GLG
NN	S	Mavis	Green	-	-	11 -	1/-	G	GLG
M	S	Jake	Yellow	-	-	3 -	1/-	M	MLG
N	S	Jake	Yellow	-	-	3 -	1/-	M	MLG
I	S	Judy	White	-	-	6 -	1/-	PSLG	PSLG
II	S	Judy	White	-	-	6 -	1/-	PSLG	PSLG
III	S	Judy	White	-	-	6 -	1/-	PS	PS
IV	S	Judy	White	-	-	6 -	1/-	PS	PS

V	S	Jill	White	-	-	7 -	1/-	PSLG	PSLG
VI	S	Jill	White	-	-	7 -	1/-	PSLG	PSLG
VII	S	Jill	White	-	-	7 -	1/-	PSLG	PSLG
VIII	S	Jill	White	-	-	7 -	1/-	PSLG	PSLG
IX	S	Jill	White	-	-	7 -	1/-	PSLG	PSLG
X	S	Jill	White	-	-	7 -	1/-	PS	PS
XI	S	Mavis	Green	-	-	11 -	1/-	LG	LG
XII	S	Mavis	Green	-	-	11 -	1/-	LG	LG
XIII	S	Emily	Green	-	-	13 -	1/-	LG	LG
XIV	S	Emily	Green	-	-	13 -	1/-	LG	LG
XV	S	Emily	Green	-	-	13 -	1/-	LG	LG
XVI	S	Emily	Green	-	-	13 -	1/-	LG	LG

JAPAN AIRCRAFT FRONT SIDE VALUES

Name	Type	Picture	Basing Color	Air to Air factor	Bombing factor	Range	Defense Factor
A6M	F	Zero	Green		1 -		8 0
1CTF	F	Zero	White	-	-	-	-
1CYF	F	Zero	White	-	-	-	-
1HF	F	Zero	White		1 -		8 0
1JF	F	Zero	White		1 -		8 0
1RYF	F	Zero	White		1 -		8 0
1SF	F	Zero	White		1 -		8 0
2SF	F	Zero	White		1 -		8 0
1SNF	F	Zero	White		1 -		8 0
2SNF	F	Zero	White		1 -		8 0
3SNF	F	Zero	White		1 -		8 0
1TF	F	Zero	White		1 -		8 0
2TF	F	Zero	White		1 -		8 0
1ZF	F	Zero	White		1 -		8 0
2ZF	F	Zero	White		1 -		8 0
3ZF	F	Zero	White		1 -		8 0
4ZF	F	Zero	White		1 -		8 0
1ZHF	F	Zero	White	-	-	-	-
1AF61	F/D	Zero	Green		1	1	8 0
2AF61	F/D	Zero	Green		1	1	8 0

3AF61	F/D	Zero	Green		1	1	8	0
4AF61	F/D	Zero	Green		1	1	8	0
2CTF	F/D	Zero	White		1	1	8	0
2CYF	F/D	Zero	White		1	1	8	0
2HF	F/D	Zero	White		1	1	8	0
2JF	F/D	Zero	White		1	1	8	0
2RYF	F/D	Zero	White		1	1	8	0
5ZF	F/D	Zero	White		1	1	8	0
6ZF	F/D	Zero	White		1	1	8	0
2ZHF	F/D	Zero	White		1	1	8	0
AFS	D	Jake	Yellow	-	-	-	-	
CYD	D	Judy	White	-	-	-	-	
D4Y	D	Judy	Green		0	1	5	0
HD	D	Val	White		0	1	6	0
JD	D	Val	White		0	1	6	0
1SD	D	Judy	White		0	1	5	0
2SD	D	Judy	White		0	1	5	0
1SND	D	Judy	White		0	1	5	0
2SND	D	Judy	White		0	1	5	0
1TD	D	Judy	White		0	1	5	0
2TD	D	Judy	White		0	1	5	0
1ZD	D	Judy	White		0	1	5	0
2ZD	D	Judy	White		0	1	5	0
CTT	T	Jill	White	-	-	-	-	
CYT	T	Jill	White	-	-	-	-	
G3M	T	Nell	Green	-		2	7	0
G4M	T	Betty	Green		0	2	9	0
HT	T	Jill	White	-	-	-	-	
JT	T	Jill	White	-	-	-	-	
RYT	T	Jill	White	-	-	-	-	
ST	T	Jill	White		0	1	6	0
SNT	T	Jill	White		0	1	6	0
TT	T	Jill	White		0	2	6	0
ZT	T	Jill	White		0	1	6	0
ZHT	T	Jill	White	-	-	-	-	
1CTT	T	Jill	White		0	1	6	0
2CTT	T	Jill	White		0	1	6	0

SA	K	Zero	Green	-	-	-	-
EE	S	Kate	White	-	-	-	-
II	S	Emily	Green	-	-	-	-
JJ	S	Emily	Green	-	-	-	-
KK	S	Mavis	Green	-	-	-	-
LL	S	Mavis	Green	-	-	-	-
MM	S	Mavis	Green	-	-	-	-
NN	S	Mavis	Green	-	-	-	-
M	S	Jake	Yellow	-	-	-	-
N	S	Jake	Yellow	-	-	-	-
I	S	Judy	White	-	-	-	-
II	S	Judy	White	-	-	-	-
III	S	Judy	White	-	-	-	-
IV	S	Judy	White	-	-	-	-
V	S	Jill	White	-	-	-	-
VI	S	Jill	White	-	-	-	-
VII	S	Jill	White	-	-	-	-
VIII	S	Jill	White	-	-	-	-
IX	S	Jill	White	-	-	-	-
X	S	Jill	White	-	-	-	-
XI	S	Mavis	Green	-	-	-	-
XII	S	Mavis	Green	-	-	-	-
XIII	S	Emily	Green	-	-	-	-
XIV	S	Emily	Green	-	-	-	-
XV	S	Emily	Green	-	-	-	-
XVI	S	Emily	Green	-	-	-	-

NOTES:

From:

M = Made for Avalon Hill's *Midway* wargame.

G = Made for Avalon Hill's *Guadalcanal* wargame.

GEN = Made in the expansion counters found in *The General*, volume 28, number 5.

PS = Made for the *Philippine Sea* battles in this thesis.

LG = Made for the *Leyte Gulf* battles in this thesis.

Used in:

M = Used in Avalon Hill's *Midway* wargame.

G = Used in Avalon Hill's *Guadalcanal* wargame.

PS = Used in the *Philippine Sea* battles in this thesis.

LG = Used in the *Leyte Gulf* battles in this thesis.

Notes:

A = The *Iowa* class battleships should have armor that matches the *Yamatos*. While the *Iowas* beltline was slightly inferior to the *Yamato*, they did possess superior deck armor.¹

B = American cruisers (and the Australian *Shropshire*) are markedly inferior to Japanese cruisers in surface combat, speed, and armor factors when they should not be. Allied cruisers were armed with eight or nine 8" guns while most Japanese cruisers were armed with ten, which is not enough of a difference to cause the Allied cruisers to be one less combat factor than the Japanese. The speed and armor of these cruisers was also close enough to their Japanese counterparts that their speed and armor factors should match on their flipped sides. The Japanese *Tone* class cruisers were also armed with eight 8" guns and should have their surface combat factor increased as well.² The victory points for these new values have been increased and are as listed in the Appendix.

C = The original flipped sides of the American escort carriers had a print speed of '1', which does not make sense because they are multiple ship units. Their speed should be raised to '2'.

D = The *Kongos* had much less armor than their fellow capital ships. Also given that the *Hiei* was crippled by mere cruiser gunfire in the First Battle of Guadalcanal, the *Kongos* armor factor should drop to 4a.³

E = The *Zuikaku* originally has a printed value of '1' for the speed on its flipped side. The *Zuikaku* had a top speed of well over 30 knots, and also her sister, the *Shokaku*, has a speed of '2' on her flipped side. The *Zuikaku*'s speed should be raised to '2' to fix what is almost certainly a misprint.

¹ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 146 – 147.

² Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 118.

³ Dunnigan and Nofi, *Victory at Sea, World War II in the Pacific*, 98.

APPENDIX F
CAPITAL SHIP LOSSES OF WORLD WAR II

Warship	Nationality	Circumstances of sinking
Bretagne	France	Mers-el-Kebir, sunk by British capital ships.
Provence	France	Mers-el-Kebir, sunk by British capital ships, later raised and repaired.
Richelieu	France	Sunk in port by aerial torpedo from planes off the carrier <i>Hermes</i> . Later raised and repaired.
Admiral Scheer	Germany	Sunk in port by land based air.
Lützow	Germany	Sunk in port by land based air, turned into a gun platform.
Graf Spee	Germany	Scuttled after the Battle of River Platte.
Scharnhorst	Germany	Sunk by battleship <i>Duke of York</i> in the Battle of North Cape.
Bismarck	Germany	Disabled by the carrier <i>Ark Royal</i> and then sunk by the battleships <i>King George V</i> and <i>Rodney</i> , and the cruisers <i>Dorsetshire</i> and <i>Norfolk</i> .
Tirpitz	Germany	Sunk by RAF in port.
Royal Oak	UK	Sunk by the submarine U-47 in port.
Barham	UK	Sunk by the submarine U-331.
Valiant	UK	Sunk by Italian torpedoes in Alexandria. Later raised and repaired.
Queen Elizabeth	UK	Sunk by Italian torpedoes in Alexandria. Later raised and repaired.
Hood	UK	Sunk by the battleship <i>Bismarck</i> .
Repulse	UK	Sunk by Japanese land based air.
Prince of Wales	UK	Sunk by Japanese land based air.
Conti di Cavour	Italy	Sunk in port at Taranto during raid.
Caio Duilio	Italy	Sunk in port at Taranto during raid. Later raised and repaired.
Littorio	Italy	Sunk in port at Taranto during raid. Later raised and repaired.
Roma	Italy	Sunk by German radio controlled glide bomb.
Kongo	Japan	Sunk by the submarine <i>Sealion</i> .
Haruna	Japan	Sunk in harbor at Kure during raid.
Kirishima	Japan	Sunk by the battleship <i>Washington</i> .
Hiei	Japan	Crippled by cruisers and destroyers, and finished off by aircraft.
Fuso	Japan	Sunk by torpedoes from destroyers.
Yamashiro	Japan	Sunk by battleship gunfire.
Ise	Japan	Sunk in harbor at Kure during raid.
Hyuga	Japan	Sunk in harbor at Kure during raid.
Mutsu	Japan	Sunk by internal explosion.
Yamato	Japan	Sunk by carrier aircraft.
Musashi	Japan	Sunk by carrier aircraft.
Oklahoma	USA	Sunk in harbor at Pearl Harbor during raid.
Arizona	USA	Sunk in harbor at Pearl Harbor during raid.
California	USA	Sunk in harbor at Pearl Harbor during raid. Later raised and repaired.
West Virginia	USA	Sunk in harbor at Pearl Harbor during raid. Later raised and repaired.